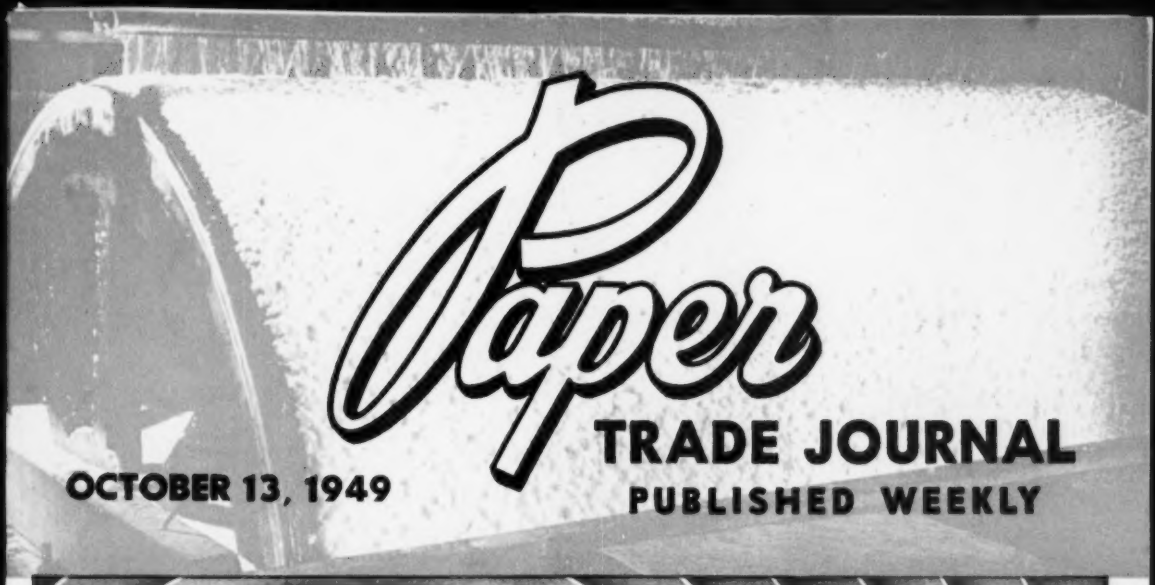


Paper TRADE JOURNAL

OCTOBER 13, 1949

PUBLISHED WEEKLY

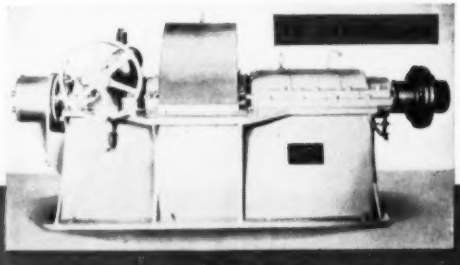
Asten Dryer Felts

ASTEN-HILL MFG. CO., PHILADELPHIA • ASTEN-HILL LTD., VALLEYFIELD, QUE.

A Little Refiner—A Long Way from Home But Read what it did in only 4 Days

"To date, we have effected approximately 10% increase in production with improved formation and physical properties. One especially notable result has been that the sizing is greatly improved due to the more uniform degree of refining which we are now getting."

The foregoing was taken from a letter from a new Sutherland user in South Africa, about 10,000 miles from Trenton, who was obviously delighted with the performance of their small 32" refiner. It's exactly what we've been telling mills for years, i.e., **Increased Production, Better Formation, Higher Strength, Improved Finish,** etc. guaranteed by Sutherlands. Mills now considering stock preparation equipment, which are much closer to our free technical service, should take particular note. **P.S. Many have already learned what this South African mill just found out.**



SUTHERLAND REFINER CORPORATION
TRENTON, NEW JERSEY

Manufactured in the United States by Valley Iron Works Co., Appleton, Wisconsin • Sutherland Refiner Ltd., Windsor Hotel, Montreal, P. Q.

Sold to Handle 24 Cords Screens 26 Cords/Hour

6x16 FT LOW-HEAD CHIP SCREEN GIVES OPERATORS THESE BENEFITS:

- **Highest percentage of clean, uniform size chips.**
- **Straight line vibratory motion keeps chips moving over screen.**
- **Horizontal operation — You save headroom and space.**

IN ADDITION TO HIGH CAPACITY, separation on the screen above was so clean that officials of this Washington paper mill ordered a second identical unit! Both screens are 6 x 16 ft double-deck *Low-Head* chip screens.

Perhaps *you* can get this same maximum chip screen performance with *Low-Head* screens. Unlike conventional inclined screens, they provide the highest percentage of uniform size chips. And the *reason* is in the unique vibratory motion — chips move in a single direction, on their sides. Long slivers do not turn on edge and lodge in screen openings.

▶ High tensile low alloy steel construction makes screen lighter, yet stronger — saves power, lengthens life. ▶ Vibrating assembly enclosed in dust and moisture-proof housing, continuously splash-lubricated. ▶ All welded parts are stress-relieved.

Allis-Chalmers also builds the economical, inclined *Ripl-Flo* screen for *average* screening efficiency. For help in selecting the correct chip screen for *your* application, contact your A-C Sales Office or write for Bulletin 07B6353A.

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CENTRIFUGAL PUMPS

TEXROPE V-BELT DRIVES

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HI-DENSITY FEEDER

STREAMBARKER

AND OTHER EQUIPMENT FOR PAPER MAKING . . .

A-2734

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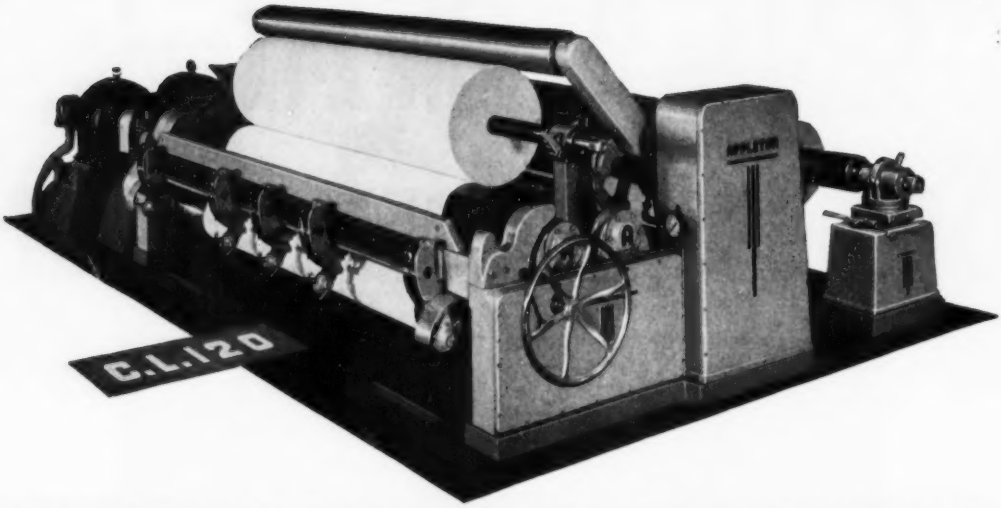
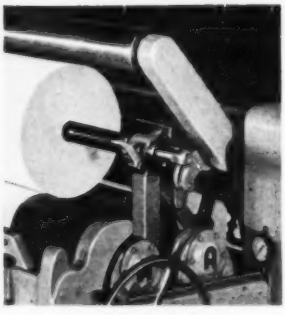


APPLETON WINDERS & REWINDERS

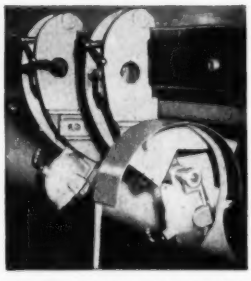


NEW RIDING ROLL

The new swinging-arm riding roll is a unique feature of Appleton Winders. It provides a high line of pressure at the start of the wind, automatically decreasing as the weight of the roll increases.

FEATURE-PACKED for Better Winding and Clean Cut Slitting at High Speeds

You'll find many new features in Appleton Winders and Rewinders • features that help speed up production and eliminate many manual operations • that provide easy and accurate control and adjustments • smooth, quick speed changes • uniform winding • easy threading • clean cut slitting with pneumatic knife pressure and release • hydraulically operated roll ejector • in fact, all of the features that mean dependable, easy, safe, precision winding and slitting at speeds in line with modern production schedules. Let us send you a copy of the Winder Bulletin giving the details on the many features of Appleton Winders.



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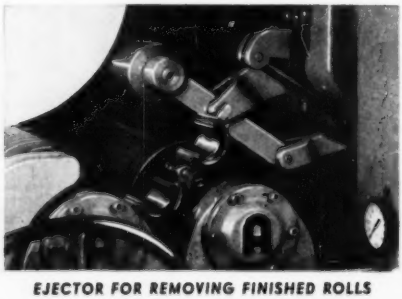
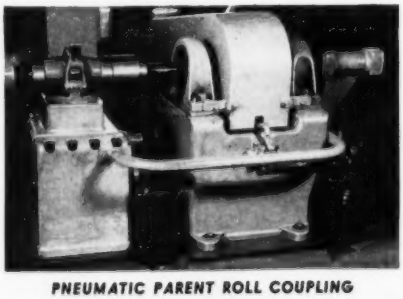


EJECTOR FOR REMOVING FINISHED ROLLS



PNEUMATIC PARENT ROLL COUPLING

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ABP ABC

OCTOBER 13, 1949

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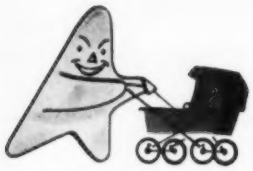
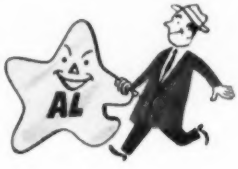
How long 

is a lifetime 

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Paper TRADE JOURNAL

TRENDS

Office of the PAPER TRADE JOURNAL, Wednesday, October 12, 1949.

Wrapping Tissue Market

While the marked revival in demand for wrapping tissues since July is to some extent seasonal, there are factors in it which indicate a continuance not only through the balance of 1949 but beyond that point, industry leaders believe.

Curtailed as a relatively non-essential by the WPB during war years, production of wrapping tissue fell steadily until the lifting of restrictions on pulp use in the last quarter of 1945, when inventories were probably at their lowest point at all levels of the economy. An artificial demand level was thus created through the immediate postwar years, accompanied by a marked degree of unjustified optimism regarding the market's future. This demand continued strong through 1947 and late into 1948. The combination of refilled inventories and general softening of the price structure for practically all grades of paper then led to more cautious buying at all levels and a sharp falling off in orders. In this field, the situation continued throughout the first seven months of 1949.

Tissue mills are now reporting a fair to good backlog of unfilled orders for wrapping tissue, it is stated. A general feeling of optimism exists at both mill and distributing levels. Given a continuance of business and consumer income at high levels, industry spokesmen see a steady demand for wrapping tissues indicated which, in turn, will mean less uneven purchases by both distributors and consumers.

Container Outlook by Areas

The most significant change noted by the Office of Domestic Commerce in the container field is increasing optimism that the industry has undergone its more serious adjustment period, and that improvement is likely for the balance of the year.

North Central States

In this area, it is evident that customers have used up most of their inventories; practically all orders are *rush*. Set-up box demand is reported to have returned to its prewar seasonal pattern. Orders for Christmas use compare favorably to last year's volume. Though stocks apparently are low, price is now of primary importance and delivery date second, in contrast with the situation a year ago.

Midwest Area

Consensus of manufacturers is that the majority of packers and industrial users of containers allowed their inventories to decrease to practically zero and are now buying for replacement and for current use. Production of board, solid and corrugated was estimated to be down 20 percent from the second quarter of 1948, although remaining approximately at the same level as during the first three months of 1949 with a slight pickup in June. Demand for butter, lard and ice cream containers continued steady, as did demand for fiber cans and tubes.

West Coast Area

Prices, while still declining in mid-Summer for most products entering into the manufacture of packages and containers, were tending to move sidewise rather than moving sharply downward. In the inventory adjustment, the distributive trade buying policy appeared over-cautious with stocks being reduced to dangerously low levels. While hand-to-mouth buying may be in the future policy of industry and trade, a resumption of buying to meet consumer demand must come from production rather than inventory, the ODC reports. The fact that the downward move of the container business has been orderly and no violent price drops have occurred would seem to indicate that the economic disorder anticipated by some will definitely not materialize. Returning business confidence makes it appear that lowered volume and profits have been completely discounted. . . . Production of paper containers for the balance of the year will be at an extremely high level, although paper box manufacturers had no substantial backlog of orders at the time of the ODC survey. Demand for paperboard by the frozen food industry is considered brisk. Both corrugated and solid fiber plants are seasonally operating at capacity. . . . In summary, it appears that West Coast container consumption for 1949 will be somewhat below 1948 but considerably higher than prewar.

New York and Middle Atlantic

Materials producers, manufacturers, convertors and distributors are all counting on increasing demand resulting from users' shrinking inventories. Probably influencing the industry's more optimistic outlook was increased demand for many types of containers, some of which was seasonal, but some of which presaged a better volume of Christmas business than 1948's.

Production Index

Ratio of production of unbleached kraft paper to potential mill capacity for that product was 85.8 percent for the week ended October 1, compared with 82.2 percent for the preceding week, and with 96.9 for the corresponding week of last year.

Comparative ratios of U.S. paper and paperboard production to mill capacity, as reported by AP&PA, are:

	Oct. 1 1949	Sept. 24 1949	Oct. 2 1948	Oct. 4 1947	Oct. 5 1946
Paper	97.6	‡95.9	99.6	109.5	107.2
Paperboard ..	94.0	91.0	96.0	100.0	100.0

‡ Revised.

Paperboard Production (Tons)

	Oct. 1 1949	Sept. 25 1949	Oct. 2 1948	Month of Sept.
Production .	206,834	202,374	191,033	771,471
New Orders .	214,138	192,289	209,094	777,373
Unfilled Orders ...	360,897	356,741	375,884	360,897

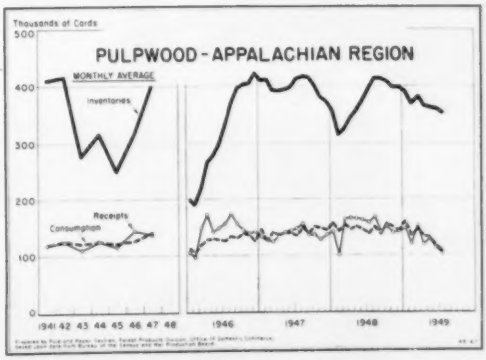
Percent of Activity, Current, 94%; Year, 80%.

General Business Indexes

Index of general business activity for the week ended October 1 dropped to 134.8 from 138.2 in the preceding week, compared with 146.8 in the corresponding week of 1948. Index of paperboard production rose to 187.9 from 185.0 in the preceding week, compared with 173.2 in the corresponding week in 1948.

U. S. MILLS AMPLY STOCKED WITH PULP WOOD

The condition of adequacy of pulpwood supply which exists in the southern and Appalachian districts also prevails throughout the U. S. Prices have experienced no recent changes of consequence, the O.D.C. reports.



YOU CAN BE SURE.. IF IT'S
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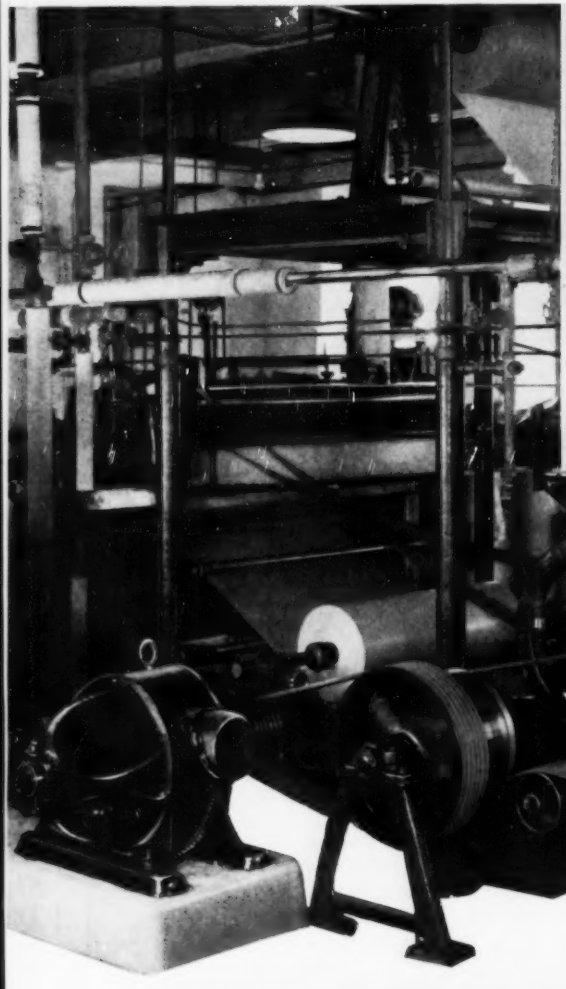


Typical Paper Industry Applications for Westinghouse Packaged Drives

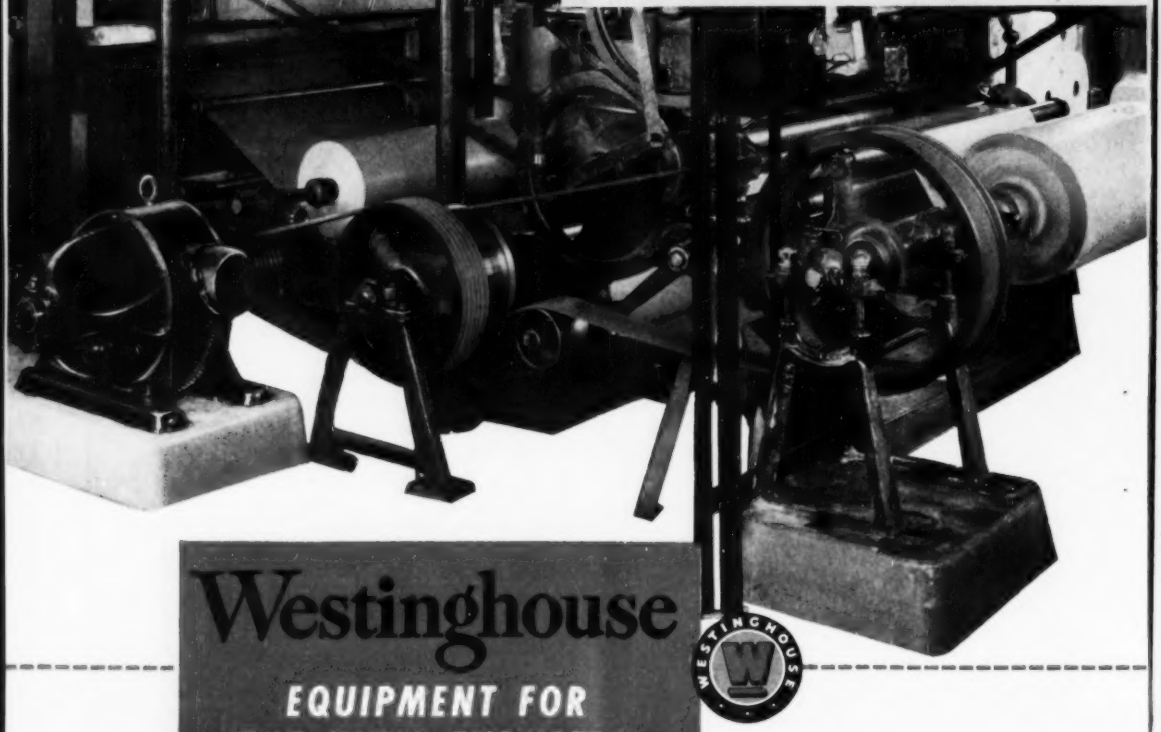
Although packaged, Westinghouse factory-built drives are made by a "building-block" method that permits many optional features. These include: stepless, time-limit acceleration and deceleration, precision speed regulation, IR drop compensation and extra exciter capacity for multimotor drives.

As a result, Westinghouse Packaged Drives are adaptable to many papermaking auxiliaries, as well as converting and finishing machinery.

Some of the tried-and-proved applications in the Paper Industry are:

Winders • Shakes • Rotary Cutters • Pulp Washers • Wet Machines • Printing Presses Special Converting and Finishing Machines

If you need an adjustable speed drive, Westinghouse Consulting and Application Engineers will gladly investigate your processes and recommend the packaged drive best suited to your requirements.



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THE PAPER INDUSTRY

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For many paper machinery applications requiring a packaged drive, the improved performance desired can be obtained by using the type having an M-G set. Other machines require the all-electronic type for top performance.

With Westinghouse, you can have your choice:

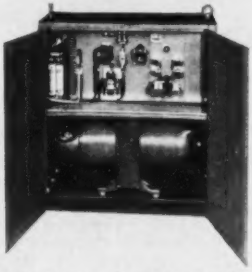
AV Life-Line Packaged Drive. This drive, using an M-G set, gives adjustable speed control up to a range of 16 to 1. It is a simple, factory-wired package housed in one self-ventilated cabinet. It is economical in every way—first cost, installation, power consumption, maintenance and floor space.

Mot-O-Trol. This packaged, all-electronic adjustable speed drive is designed for use with those machines that require extreme speed ranges up to 100 to 1, or precise speed regulation to as little as plus or minus ½%. Its heavy-duty components and simplified circuits assure trouble-free service under difficult mill conditions.

Both drives give you fast, smooth operation of those machines for which they are made. Each one is backed by Westinghouse unified responsibility for complete drive performance *as a drive.*

Besides drives—packaged and tailor-made—Westinghouse makes a complete line of electrical equipment for the Paper Industry. No matter what your needs, Westinghouse can supply them. Call your nearest Westinghouse District Office, or write to Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-94798

ESSENTIAL ELEMENTS OF WESTINGHOUSE PACKAGED DRIVES



This compact, freely-ventilated cabinet for the AV Life-Line Packaged Drive houses the complete power unit. The motor-generator set for power conversion, dynamically balanced to eliminate vibration, is rut ber mounted in lower compartment. Cooling air for the M-G set is drawn through filters which are easily replaced.

Motor and control for either drive. Motor is standard SK Life-Line, d-c motor with bearings which require no lubrication. Operator's station with combined start-stop push-button and speed control knob—an exclusive Westinghouse feature—can be installed where most convenient. Reversing and inching are optional.

This is the self-ventilated Mot-O-Trol cabinet, containing all necessary circuits for the complete control of motors. Because of simplified circuit design, Mot-O-Trol has fewer tubes, potentiometers, resistors, capacitors and Rectoxes than any similar equipment. Rugged, industrial components resist vibration and give longer life.

Paper TRADE JOURNAL

News of the Week

MILLS

Weyerhaeuser Enters Pulp and Paper Field in Idaho

ST. PAUL—Weyerhaeuser's newest pulp and paper mills will be located at Lewiston, Idaho, the directors of Potlatch Forests, Inc., reported on October 6. William P. Davis, for many years as executive of the International Paper Co., has been elected president and general manager of Potlatch Forests, Inc., the Weyerhaeuser affiliate which will carry out the company's extensive plans for a more complete utilization of the "mixed woods" which grow abundantly in northern Idaho.

Potlatch Forests, Inc. is one of Weyerhaeuser's largest lumber producing units. It operates sawmills at Lewiston, Coeur d'Alene and Potlatch, Idaho. In the past its production has run largely to white pine, except during the war when the excessive demand for lumber made it possible to include such species as white fir, red fir, larch and cedar which constitute approximately one-half of the forest cover in the Inland Empire. Since it usually is not possible to maintain lumber production on a 50-50 basis as between white pine and the so-called mixed species, Weyerhaeuser has completed its plans for the integration of its new pulp and paper plants with its lumber production facilities at Lewiston. All three of its sawmills in the Inland Empire will continue to produce white pine lumber and as much of the remaining species as the trade will consume. Balance of the mixed species will be used by the pulp and paper plants.

The decision to make paper and pulp from the mixed woods (other than white pine) of the region follows an extensive survey of raw materials and their suitability for the purpose.

Mr. Davis, who was selected to head up the expanded activities grew up with International Paper Co. and has played a major role in designing, engineering and construction of its several plants in the South. He began his career in 1919 as an electrician for the Southern Paper Co. at Moss Point, Miss. By 1922 he had become chief engineer of the plant.

When International purchased the Moss Point mill in 1929, Mr. Davis was transferred to Panama City, Fla., to help complete construction of and to assist in starting International's new mill at that point. From then on he was busy designing and building additional plants and machines to carry out International's rapidly expanding program in the South. His activities took him to Mobile, Ala.; Georgetown, S. C.; Springhill, La.; Camden, Ark.; and Bastrop, La.

In 1941, Mr. Davis was transferred to Mobile, where he not only continued his work as chief engineer, but was made assistant to the production manager of all Southern Kraft Division operations. In 1943, he went to International's New York office as coordinator of production and sales. Shortly afterward he was made manager of the Container Division and of the Single Service Division.

WILLIAM P. DAVIS
President
Potlatch Forests, Inc.

Weyerhaeuser operates the Northwest Paper Co., with plants at Cloquet and Brainerd, Minn. It pioneered in the development of sulphite hemlock pulp in the Pacific Northwest with plants integrated with sawmills at Everett and Longview, Wash. Recently it built a sulphate plant at Longview and a kraft container board plant at Springfield, Ore., where its newest sawmill is now beginning to operate.

While the problems involved in pulp and paper production in the Inland Empire are said to be numerous and challenging, the Weyerhaeuser Company is proceeding with its plans fully confident that the forest area tributary to the Clearwater River can be made a permanent source of raw material for its new operations.

Mr. Davis will maintain headquarters at Lewiston, Idaho, and will make his home in that city.

Fraser Personnel Realignments

MADAWASKA, Maine—Fraser Paper Ltd. reports the following personnel changes in Fraser Co's., Ltd., and/or its subsidiaries, Fraser Paper, Ltd., and Restigouche Co., Ltd.:

J. W. D. Hierlihy has been appointed acting mill manager, Fraser Paper, Ltd., at Madawaska, in the place of T. M. Barry who resigned effective October 1 to take a position with the Hollingsworth & Whitney Co.

D. A. Fraser, formerly manager of United States pulp sales, Fraser Co's., Ltd., and Restigouche Co., Ltd., resigned on August 11 last to take a position with the Soundview Pulp Co.

D. R. Seely, formerly assistant to the general manager, has been appointed assistant general sales manager of the Restigouche Co., Ltd., and assistant general sales manager, Pulp Division, Fraser Co's., Ltd.

K. W. Matheson, formerly in charge of the legal department of the Fraser Co's., Ltd., and subsidiary companies, has been appointed assistant to the general manager, Fraser Co's., Ltd., and subsidiaries.

Henry, Great Northern Director

BOSTON — Barklie Henry has been elected a director of the Great Northern Paper Co. Mr. Henry is a trustee of the United States Trust Co., New York, the New York Hospital and of the Rockefeller Institute for Medical Research and is a director of the Union Sulphur Co.

Stolk American Can Co. Director

NEW YORK—W. C. Stolk, recently elected executive vice-president of the American Can Co., has been made a director of that firm, succeeding James B. Taylor, a member of the board for 27 years, who has retired because of ill health.

AWP Transfers Smiley to NYC

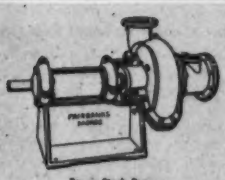
HOLYOKE, Mass.—Nevin M. Smiley of the Chicago sales force of the American Writing Paper Corp., has been transferred to the New York sales office.

Lemeiux Resigns, Vannett Successor

HOLYOKE, Mass.—Edward Vannett has been named plant manager of the American Tissue Mills, succeeding Victor Lemieux who has resigned.

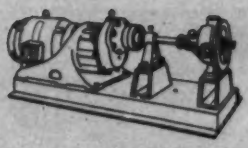
Price Bros. & Co. Ups Edwards

QUEBEC — Dr. Joseph Edwards, formerly assistant manager of the paper division of Price Brothers & Co., Ltd., is now manager of that division.



Paper Stock Pumps

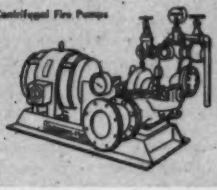
Frame Constructed Rotary Pumps



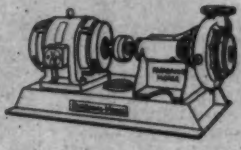
Rotary Pumps with Geared Head Motor Drive

Vertical Propeller Pumps

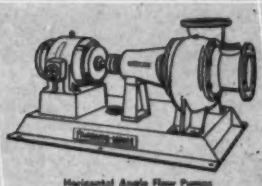
Centrifugal Fire Pumps



Two-Stage Bullitogether Pumps



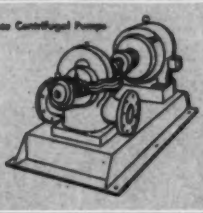
Horizontal Sewage and Trash Pumps

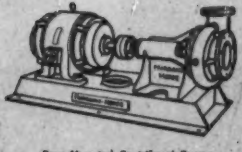


Horizontal Angle Flow Pumps

Vertical Close-Coupled Sewage and Trash Pumps

Split-Case Centrifugal Pumps

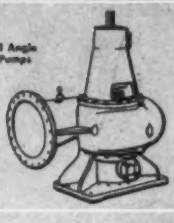




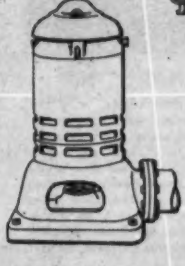
Base-Mounted Centrifugal Pumps

Vertical Sewage and Trash Pumps

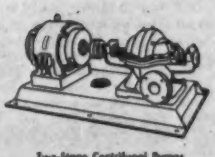
Vertical Angle Flow Pumps



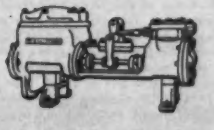
Bullitogether Centrifugal Pumps



Deep Well Turbine Pumps



Two-Stage Centrifugal Pumps



Duplex Steam Pumps

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plus performance
lasting dependability
unsurpassed economy

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MOTORS • GENERATORS • STOKERS • RAILROAD MOTOR CARS
and STANDPIPES • FARM EQUIPMENT • MAGNETOS

Waste Treatment Plant Bids In

KALAMAZOO — Bids have been received by the Kalamazoo River Improvement Co., for the building of a plant to treat waste from de-inking paper plants, to be constructed at the Michigan Paper Co., Plainwell.

The plant is the outgrowth of several years of research, and will be a production test of the system evolved in the pilot plant last year at the Plainwell plant where research was conducted by Phillip Morgan.

If in practice the bacterial treatment proves as effective and efficient as it did in the test run, duplicates of the plant will be erected at other mills in the valley, it is reported. Six companies are interested in the project: Allied Paper Mills, Kalamazoo Paper Co., St. Regis Paper Co., Michigan Paper Co., and Watervliet Paper Co.

Plumping for an American America

NEW YORK—Carle C. Conway, chairman of the board with Continental Can Co., is now the America of competition and free enterprise in over more than 40 local radio stations. His broadcasts are part of "America, Speak Up!" a weekly radio series created by America's Future, Inc., a non-profit educational foundation devoted to the protection of our freedom. In his talk, which follows the interview technique, Mr. Conway analyzes his company's eight-point industrial relations program, which is based upon the policy, "Justice shall be our basis for building broader character as individuals, and broader business as an institution."

Mr. Conway recently celebrated his 36th year with Continental. After leaving college he went into the piano business, and in 1905 organized the Conway Co. after buying control of the Hallet & Davis Piano Co. In 1912, Continental Can elected him vice-president and member of its board of directors and executive committee.

In 1937 he was chairman of the Committee for Study and Reorganization of the New York Stock Exchange, which subsequently became known as the Conway Committee. He is a trustee of the International Foundation for Infantile Paralysis and a director of the Boys' Clubs of America.

Brown Case to Court of Appeals

BALTIMORE—Arthur Brown of New York, a shareholder of the Eastern States Corp., on September 30 appealed a Federal Court order dismissing an injunction which he got against the investment holding company. The new move takes the case to the United States Fourth Circuit Court of Appeals in Richmond.

Given Six Months to Meet Rule

OTTAWA.—Ruling that the K. V. P. Paper Co. of Espanola, Ont., must discontinue polluting the Spanish River the Supreme Court of Canada has allowed the company six months in which to bring the ruling into effect. The company had appealed from an injunction issued by a lower court. The Supreme Court judgment dismissed the company's appeal with costs. The legal move started over a year ago when land owners of along the river below Espanola, including farmers and operators of tourist camps, claimed that the company had polluted the river ever since the plant was opened in May, 1946.

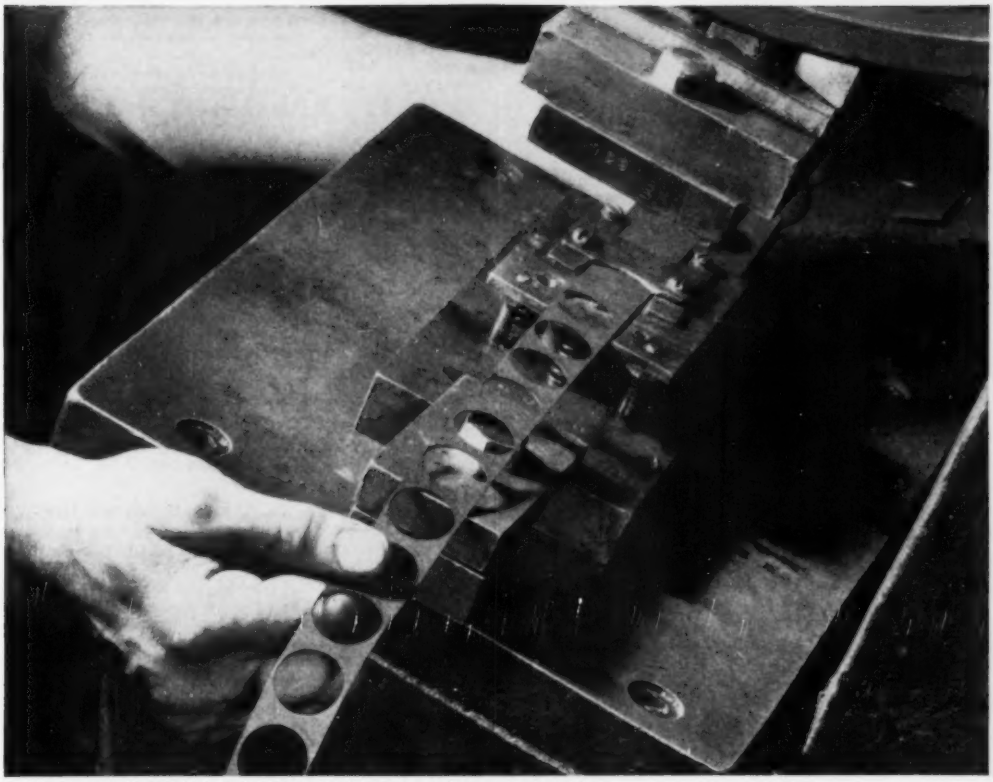
Northern Asks Time Extension

MADISON, Wis.—More time to study solutions to the water pollution problems was requested on October 4, by the Northern Paper Co. of Green Bay. The company petitioned the state water pollution committee for a modification of the order of June 27 in which the company was ordered to submit plans by December 31 for elimination of pollution in the Fox River. The firm had also been ordered to have equipment operating by December 31, 1950, for eliminating waste in the river.

According to General Manager

FABRICA NACIONAL DE PAPEL'S SANDY HILL STRAW PAPER MILL ROLLING

Fabrica Nacional de Papel, Montevideo, Uruguay, on September 15 started up a complete new and ultra-modern straw paper mill, the design and layout of which, including the mill foundation was furnished by the Sandy Hill Iron & Brass Works, Hudson Falls, N. Y. . . . Starting of operations in this mill establishes it as one of the largest producers of fine paper from bleached straw in the world. . . . A cablegram received by Sandy Hill from Rodolfo Rheinbacher, technical manager of Fabrica Nacional, read: "Started today, ten o'clock, paper four hours later." A second cablegram the same day from Juan Carlos Raffo Fravega, president, stated: "With great satisfaction we inform you that today, with Mr. Hayes' assistance, we made our first paper on the new machine.". . . Mr. Hayes is Sandy Hill's erection engineer in South America. . . . Pictured above, extreme left, reading the cablegrams, is F. A. Juckett of Sandy Hill. . . . Receiving the good news, left to right, are the following Sandy Hill men: SEATED: left to right, Francis Russell, John Crocker, supervisor of engineering; L. G. Brockelsby, O. John Mills and Frank Sexton. . . . STANDING: George Clink, Edward Spaulding, Paul Fasoli, Ivan Fox, Paul Martineu, Kenneth Seeber, Richard Collins, Maxie Daniels, Harold Rice, Foster P. Doane, Jr., Loren G. Gallup, Clayton Howe, Cleon King, Arthur Langlois, Robert Roe, Arthur J. Parent, Jr., J. Walter Juckett.



Tensilite 300, a product of Plastic Products Division, The J. P. Lewis Co., Beaver Falls, N. Y.

New insulation punches better ... pinches pennies, too!

THE machine pictured here is cold punching a high pressure laminate insulating material—an operation that often "just couldn't be done." Now it *can* be—easily—using Tensilite 300, with important savings to boot.

Tensilite 300 is a new high pressure plastic laminate. It's made of a new type of virgin pulp paper, Hycar American rubber, phenolic resin and other ingredients.

Hycar makes the sheet highly flexible, eliminating the problem of a too brittle sheet which may crack or tear during punching. With most conventional laminates, it is often necessary to heat prior to punching. With Tensilite 300, the thinner laminate sheets may be punched cold.

Hycar imparts other exceptional advantages, too. It improves practically all strength properties of this new insulating material . . . gives it better moisture resistance and electrical properties. All this at approximately half the cost of a standard high pressure laminated material!

Hycar made an improvement *and* did a cost-saving job here as it has in so many other fields. For Hycar is extremely versatile—light in weight, resists oil, gas, heat, cold, weather, wear and abrasion. Besides being a base material, it may be used as a plasticizer for polyvinyl resins . . . as a modifier for phenolic resins . . . as an adhesive base . . . as a latex for coating and impregnating.

Hycar may be just what you're looking for to solve a problem, or get a new product to market, profitably. Complete information and technical advice are yours for the asking. Just write Dept. HH-11, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio.

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American Rubber

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Milan Boex, the scanty knowledge at the present time of water anti-pollution methods does not warrant the outlay by the company of millions of dollars on useless construction.

Steps have been taken by the firm to combat the problem, he said, by installing two new fiber removing machines. Also, the company is planning to send representatives to Sweden to study anti-pollution in the paper mills there, he said.

Solids would probably be removed by the end of 1950, but sulphite liquor discharges are still a stubborn problem.

Fifteen University of Maine Lectures

ORONO, Maine — Students taking courses in pulp and paper technology at the University of Maine will have an opportunity during the fall semester to hear 15 talks on pulp and paper making by outstanding specialists.

Speakers and their subjects as follow:

Professor Fay Hyland, University of Maine, "Structure of Wood"; Professor Irwin B. Douglass, University of Maine, "Chemical Properties of Pulp Wood"; D. B. Demoritt, Dead River Co., Bangor, "Woods Operations"; C. A. Rodden, chief engineer, Hollingsworth & Whitney Co., Waterville, "Preparation of Pulp Wood"; R. M. Hume, superintendent, Great Northern Paper Co., Millinocket, "Mechanical Pulping".

J. G. L. Caulfield, assistant technical director, Eastern Corp., Bangor, "Sulphite Pulping"; John Darrah, chemical engineer, Penobscot Chemical Fibre Co., Great Works, "Preparation of Sulfur Dioxide"; James H. Snyder, sulphite superintendent. St. Regis Paper Co., Bucksport, "Sulphite Acid Systems"; Henry Perry, consultant, New York, "Semi-Chemical Pulping"; Dr. T. H. Werner, S. D. Warren Co., Cumberland Mills, "Caustic Pulping".

W. B. Beckler, works manager, Brown Corp., LaTuque, Quebec, "Kraft Pulping"; Linwood Willins, research chemist, Oxford Paper Co., Rumford, "Chemical Recovery"; Dr. J. L. Parsons, research director, Hollingsworth & Whitney Company, Waterville, "Bleach Systems and Chlorine Bleach"; Leonard Pierce, St. Regis Paper Co., Bucksport, "Peroxide Bleach"; A. F. Armstrong, plant personnel manager, Scott Paper Co., Chester, Pa., "Personnel Management".

Cola Parker, Wells Estate Trustee

MILWAUKEE—Cola Parker, president of the Kimberly-Clark Corp., has been appointed as trustee of the Daniel Wells, Jr., estate, once the biggest fortune in Wisconsin. Mr. Wells died in 1902 at the age of 94 leaving a fortune valued at nearly $8,000,000. Since then the estate has climbed to more than $9,500,000 and has paid out over $16,000,000 to heirs. Mr. Parker replaces Daniels Wells Norris, who died last November.

Helen Jane Smith, Prize-Winner

VANCOUVER, B.C.—Photogenic Helen Jane Smith of the Powell River Co., Ltd., was awarded first prize of $600 for her essay on "Canada's Business System — and You" by the Better Business Bureau of Vancouver. Miss Smith is an associate editor of the Powell River Co's., weekly periodical, *Men and Paper*, in which her column appears regularly. Her prize winning essay follows:

"Canada's business system is as close and as vital to you as your heart—it takes both of them to keep you alive. 'Business' means all of

HELEN JANE SMITH

us making a living and using what we make. We are all in business mainly because we have to eat.

"In Moose Jaw or Moscow, under Capitalism or Communism, business operates under the same essentials — Enterprise, Incentive, Technology, Property, Capital, the three M's—Money, Markets, Management, Labor and regulations. The difference lies in HOW these essentials are organized and run and for WHOSE benefit. The attackers of our system lean heavily on the words 'Capitalists' and 'Profit System.' Who are these 'Capitalists' and what is 'Profit'? 'Capitalists' are the people who own and control Canada's business system—that's you and I. Anybody who owns a share of stock, puts a dollar in the bank, buys a home or takes out a life insurance policy is a 'Capitalist.' Directly or indirectly we are providing the 'means of production.' Without capital machinery cannot start, business cannot expand, jobs cannot be created. Because we the people own Canada's business system, we are able to benefit from it—but only if there is a profit.

"'Profit' is the difference between what a man puts into a business and what he gets out of it—in any form. Before a manufacturer can think of profit what happens to his money?—the bulk goes to labor (wages and salaries) and materials. Then he pays rent, office expense, light and power, selling and shipping costs, replacement of worn-out or obsolete equipment, insurance, interest on borrowed money, numerous taxes and other expense items. Anything left is called 'profit before income taxes.' The government depends on this profit for a substantial part of the cost of running our country. The balance is split three ways:

1. Something to put aside to keep the business going when times are slack.

2. Provision for expansion, new buildings, machinery.

3. Dividends to the shareholders whose capital made the business and jobs possible.

"The great mass of people on our continent enjoy the highest standard of living the world has ever seen because we produce more. Higher wages and higher living standards come only from increased production made possible by capital—the 'means of production.'

"The difference between Capitalism and Communism is the difference between making up your own mind or having someone else make it up for you—whether you will live with dignity and self-respect or whether the freedom we take so much for granted will be replaced by the economic and political tyranny of the 'solvers' and 'planners' who would take everything and give nothing. The better we understand our system the better equipped we are to detect the flaws in arguments against it.

"Our system is not perfect. We must solve depressions, curtail business, labor and government monopolies. Quick 'cure-alls' only SOUND good. Like a one-man Better Business Bureau every Canadian should examine these 'cures' closely and intelligently—he is deciding his future."

Provincial Paper Installs New Unit

PORT ARTHUR, Ont. — Provincial Paper Ltd., will install a second unit at its local mill to meet the demand for machine-coated paper which the company introduced to Canada two years ago, President D. W. Ambridge, disclosed on October 3. Cost is estimated at $375,000.

Installation of the second unit is to begin as quickly as possible, with the expectation that the resulting increase in production will become available by the middle of 1950.

Net Paddock Estate, Million-Plus

FULTON, N. Y.—Gross value of the estate of the late H. Lester Paddock, board chairman of the Oswego Falls Corp. and the Sealright Co., who died June 22, 1948, was $1,130,476.35, according to transfer tax appraisal proceedings filed in surrogate's court. Deductions of $108,841.44 bring the net down to $1,021,631.91.

'49 South's Man of the Year

BREVARD, N. C. — Businessmen, civic clubs and friends of Harry H. Straus are endorsing him as the "1949 South's Man of the Year." The Ecusta president is one of 50 businessmen in the South nominated for this honor by Hubert Lee, editor of *Dixie Business*.

Stevens' Kaiser Trust Co. Director

WINDSOR, Conn.—C. Julian Kaiser, vice-president and general manager of the Stevens Paper Mills, Inc., of Windsor, and Westfield and South Hadley, Mass., has been elected a director of the Windsor Trust Co.

New Mill Boiler Completed

ONTONAGAN, Mich.—The new boiler in the National Container Paper Corp., six months in building, has been completed. It will eject 42,000 pounds of steam per hour.

HERE'S SOMETHING *NEW* IN

Twisting Tissue

This new twist keeps twisting tissue from breaking in the machine. It's the UFORMITES—urea formaldehyde resins used to wet-strengthen paper. Wherever they are used, tissue can be made into twine more speedily and less expensively.

UFORMITES are easy and economical to use. No pre-treatment or special equipment is necessary. Simply add a small quantity of UFORMITE resin to the pulp before sheet formation. Then wet tissue can be twisted with much less breakage because UFORMITE boosts wet strength 300%. The saving in "breakage-time" more than pays for the resin.

In bag and liner stocks, paper towels, glassine, locker wrap, map paper, blueprint and tag stocks too, you'll find the UFORMITES giving maximum strength at minimum cost. In Kraft stocks, a three-fold increase in wet tensile strength is typical. And similar increases can be obtained in both sulfite and groundwood stocks. Write today for full details of the UFORMITES.

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RHOZYMES BB and E-5—for enzyme conversion of starch.

TAMOL P—for effective pitch control, a dispersing agent for pigments.

TRITONS—surface-active agents with a dozen uses in paper manufacture—for increasing absorbency, controlling foam, de-inking waste, cleaning felts, processing raw cotton or rags, dispersing pigments, improving penetration of sizes, etc.

The Hydrosulfites—reducing agents for stripping color from rag stock or for bleaching pulp.

HYAMINES—quaternary ammonium germicides and deodorants used to produce bacteriostatic papers and paper board.

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THE RESINOUS PRODUCTS DIVISION

Washington Square Philadelphia 5, Pa.

The Resinous Products Division was formerly The Resinous Products & Chemical Company

DAVIES WINS PACIFIC MILLS, LTD., SCHOLARSHIP

Center: J. A. Young presents $250 scholarship check to Norman G. Davies. . . . Seated, in picture, are: M. D. Hamilton, Pacific Mills, Ltd., director; A. M. Charleson, sawmill superintendent, Ocean Falls, B. C., and W. E. Wintemute, Pacific Mills, Ltd., director. . . . In addition to this Company University Entrance Scholarship, Mr. Davies won the General Proficiency Scholarship of the University of British Columbia. . . . P. E. Cooper, president of Pacific Mills, Ltd., was the donor of the Entrance Scholarship. . . . Mr. Davies, who has attended school in Ocean Falls for the past three years, was also awarded a plaque by the Oceans Falls School Board in recognition of his being the outstanding student in 1948-49 scholastically and for citizenship.

Mead Addresses Supervisors

ESCANABA, Mich.—Employes of the Escanaba Paper Co. were hailed on October 4 by George H. Mead, honorary chairman of the board of the Mead Corp., for their part in developing the Groos mill which, he predicted, is destined in five years to become one of the best and most profitable of all the 16 Mead plants.

Mr. Mead spoke at a meeting of the Escanaba Paper Co., and Manistique Pulp & Paper Co., supervisors' staffs. He told the supervisors that the Escanaba mill is producing a high quality paper for which there is a strong demand and praised the employes for the fine condition in which they were keeping their plant.

Mr. Mead reviewed the pension program started for the corporation's workers two years ago. A part of the corporation's profits are put into the pension fund and he pointed out this as an example that employes benefit from when their company has several diversified operations. Although one plant might fail to show a profit, its workers would receive pension benefits from the other Mead units.

Employes were urged by Mr. Mead to take an interest in national and international affairs in addition to their jobs. Discussions on public affairs, he said, would make worthwhile programs for meetings of the Foremen's Club, which is being organized at Escanaba's mill at Groos.

"Everything we have in this country — our industries, our jobs — will be worthless unless we save our democracy and our freedoms," Mr. Mead emphasized. "We must prevent any minority from destroying this country. We must get the people of every community to straighten their thinking. I am confident we are going to save America from disaster and also save democracy. I think we have a great future; I am still very optimistic."

Ed Packenham, who presided as toastmaster, announced the appointment of a committee to arrange for an organization meeting of the Foremen's club in November. Committee members are Francis Rogers, Ernest Martin, Leonard Hornblad, Einar Beck and Ed Packenham.

Brief talks were also given by E. G. Bennett, manager of the Escanaba Paper Co., and R. W. Haddock, retired general superintendent.

EVERYBODY HAPPY

All Kalamazoo was happy and completely satisfied when the Sutherland Paper Co. team won the Eastern Division Amateur Baseball Championship in Battle Creek, Mich. Displaying post game smiles are, left to right: L. W. Sutherland, president of the board of directors; La Salle "Punk" Smathers, manager of the team, holding the eastern division trophy; and William Race, president of the Sutherland Paper Co.

Kimberly-Clark Host to Sulzberger

NEENAH, Wis. — Kimberly-Clark executives were visited here by Arthur Hays Sulzberger, publisher of the *New York Times* on September 25. Among the officials who received Mr. Sulzberger were Charles Sage, president of the Spruce Falls Power & Paper Co., a subsidiary of Kimberly-Clark; F. J. Sensenbrenner and Ernest Mahler, executive vice-president of Kimberly-Clark.

Sees Mills Leaving New York State

WATERTOWN, N.Y.—James E. Davis, of the New York College of Forestry, Syracuse, addressing the Watertown Rotary Club on October 5, declared that paper, board and pulp mills are gradually leaving New York state due to the slow but sure loss of resources. Mr. Davis said there are now 79 paper mills, 35 board mills and 44 pulp mills in the state. He urged reforestation to prevent the loss of such industries.

Dr. Simerl Sees Increasing Demand

MENASHA, Wis.—Dr. L. E. Simerl, supervisor of the materials section of the Marathon Corp., in a speech here during the closing days of September described Marathon's contribution to protective food packaging, especially in the field of frozen foods. He predicted that the future will bring increasing demands for frozen, dehydrated, cooked and ready-to-eat foods.

Inland Empire's New Wood Room

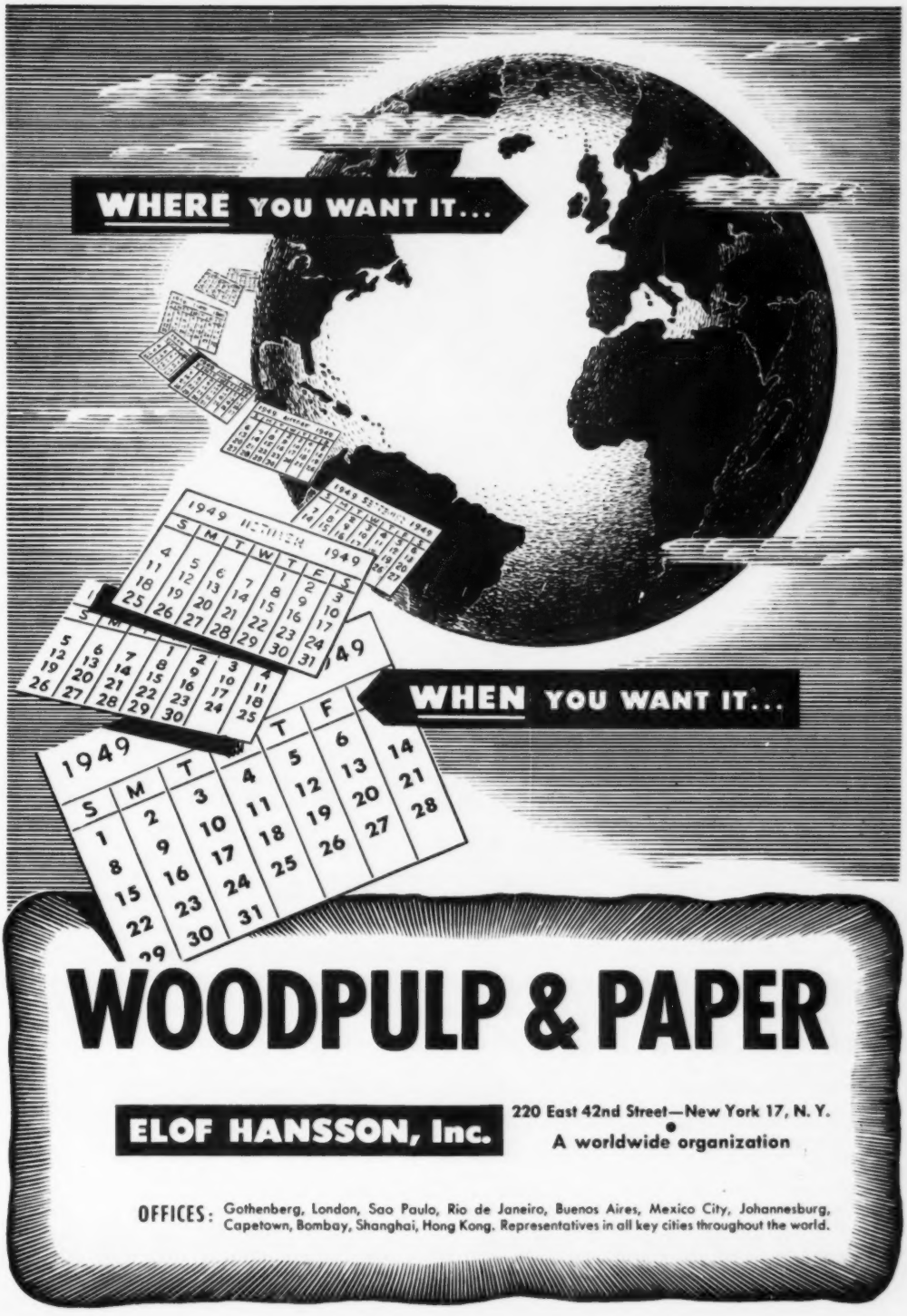
MILWOOD, Wash.—The new wood room of the Inland Empire Paper Co., was scheduled to be in service early in October. Clifton & Applegate are the contractors on the major construction job. The new facilities were designed by W. H. Rambo of Portland in collaboration with C. A. Buckland and Myron Black of the paper company.

Marvellum's Bracewell Resigns

HOLYOKE, Mass.—Russell S. Bracewell has resigned as vice-president, secretary and a director of the Marvellum Co. He has not yet announced his future plans, and no successor has been named. Mr. Bracewell was one of the organizers of the company in 1921, and has been in charge of development and manufacturing since then.

MacAdam to Champion-International

LAWRENCE, Mass.—William C. MacAdam has joined the Champion-International Co., as assistant purchasing agent. He will assist in the procurement of all supplies and materials used by the Company with particular emphasis on wood procurement.



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Corporate Gifts Committee Chairman

OSWEGO, N. Y.—William R. Adams of Watertown, vice-president of the St. Regis Paper Co., has been appointed chairman of the Corporate Gifts Committee of the Oswego Chest Campaign to be held later this month.

Turbine Failure Halts Manistique Mill

ESCANABA, Mich.—A steam turbine of the Manistique Pulp & Paper Co. here broke down on October 4, bringing operations to a temporary stop, said R. G. Hentschell, manager.

FORESTRY

House OK's Reforestation

By RICHARD LaCOSTE

WASHINGTON—A 15-year reforestation program on the 80-million acres of the nation's commercial National Forests timberlands was OK'd by the House during the opening days of October. Ultimate cost for the program—which would be extended indefinitely thereafter under the Resolution introduced—calls for appropriations totaling $113-million. Speedy passage of the program is not scheduled.

A similar program for the revegetation of some 83-million acres of grazing lands, is incorporated in the bill.

During discussion on the House floor tribute was paid to the pulp and paper industry. Said Rep. Reid F. Murray (R-Wis.): " . . .I am more and more impressed with the advance of my State when I realize, day after day, just like this piece of legislation, that Wisconsin has been one of the leaders, as far as this phase of American agriculture is concerned. Over 20 years ago the leadership was taken by the paper-mill people. As you probably know, Wisconsin is dotted with some of the most splendid paper and pulp mills which you can find anywhere in the country. They had foresight and they acquired a lot of this cheap land and went and planted hundreds of acres of trees many years ago."

Rep: Murray told his colleagues that Wisconsin has provided that the taxes will not be over 20 cents an acre on the land that has been reforested. What the USDA may charge or what policy it will follow, is not known now. But there are some four million acres of denuded and unsatisfactorily stocked timberlands to be made productive under the program.

Said Rep. Mike Mansfield (D-Mont.):

"The national forests contain a substantial acreage of timberland that is either denuded or badly understocked. Some of this acreage will come back naturally to desirable tree growth, but over four million acres of the commercial timberlands must be reforested artificially if the potential capacity of the lands is to be utilized for the production of forest products."

Rep. Mansfield spoke of a sizable job yet to be accomplished in north Idaho and western Montana in the extensive old burns. "Even larger areas of land acquired after clear-cutting and burning are still in need of replanting in the Lake States," he said, adding that "Up to the present time, the Forest Service is enabled to plant about 35,000 acres a year, and a little arithmetic will show, with four million acres to plant, it would take well over 100 years to do the job." He added that the major part of the reforestation could be accomplished in 15 years. Rep. Mansfield grasped the main problem when he said, "This work must be done eventually. Continued postponement of the job will result in the work being more costly and the benefits further delayed into the distant future."

Pointing out that the joint resolution embodying the progressive program would place Congress on record as recognizing the need for an accelerated program of reforestation, Rep. Mansfield concluded, "It would also authorize appropriation of the funds needed to carry out such a program."

To Set Colo. Mill Bid Opening Date

DENVER—A United States Forest Service official in Washington, D. C., speculated October 4 that bids will be opened around December 1 for the sale of Colorado national forest timber for a pulp paper mill.

Ira J. Mason, chief of the timber management division, told *The Denver Post* by telephone that he expects a delay caused by last-minute entry of a second bidder will not delay the project for any considerable length of time.

T. W. Schomburg of 1856 Colorado boulevard, representing undisclosed interests, proposed buying timber for a mill operation in the Denver area. Until his suggestion appeared last week (see Paper Trade Journal, October 6 issue, page 18) the sole indicated bidder was the Columbine Development Co., an organization of western slope interests planning a plant on the Colorado River below Glenwood Springs.

Denver forest service officials had been prepared late last week to begin advertising under the terms and conditions designed for a western slope mill having a daily capacity of 300 tons of product and an annual consumption of 115,000 cords, mostly of insect-killed Engelmann spruce. The Denver mill would produce about 125 tons daily, and consume less than one-third as much timber.

Mr. Mason said on October 4 that the service was considering whether to change the terms of the contract, and expected to reach a decision on or before October 9. If the requirement as to plant location is relaxed the change would be simple to make, he added.

"We'll initiate advertising some time this month," he said. "It will run for 30 or 45 days, and the bid date probably will be around December 1."

Local forest service officials recalled that about 20 years ago a Wisconsin paper company showed intent to build a pulp mill in Colorado, and the service invited bids. Another larger concern made the most favorable bid, however, posted $15,000 deposit and then failed to proceed with plans.

The government agency is eager to further an industrial use for the enormous stands of Englemann spruce killed by a bark beetle during recent years. Negotiations with the Columbine company, headed by Preston Walker of Grand Junction, have been under way for a year.

B. C. Forest Ranger School

VANCOUVER, B. C. — British Columbia now has a modern school for forest rangers established in newly opened buildings at the Green Timbers on the Pacific Highway, near New Westminster.

Training of forest rangers was commenced in British Columbia in a former relief camp in 1946. The new structure provides dormitories and class room facilities for a class of 20. The new building was officially opened by Hon. E. T. Kenney, Minister of Lands and Forests, and Dr. C. D. Orchard, deputy minister. The ceremony was attended by representatives of all branches of the forest industry.

The school is designed to give rangers practical training which they formerly had to accumulate by actual practice in the woods. Men became eligible for training at the new school after a period of trial and practical experience in the service and after passing entrance examinations.

Up to now British Columbia, with lumbering as a major industry, has lagged years behind other provinces in establishing this type of institution. The new unit will give British Columbia the most modern facilities in Canada.

Under the direction of R. D. Greggor, former district forester at Prince Rupert, and J. Redley, former fire inspector, students are given training in silviculture, grazing, forest law, surveying, use of mechanical equipment, cruising, forest insects and diseases, mathematics and fire protection. The course starts in the Spring, but is interrupted during the fire season when the men go back to their jobs to return in the Autumn for completion of the course.

Mr. Kenney recalled that forest proruction had grown from $45,000,000 two decades ago to $102,000,000 in 1940 and $36,000,000 last year. This high rate of depletion has hastened the day when the problem had to be faced. To do this, the Forest Service needed educated men. As time went on the school would prove itself as an institution which would aid greatly in guaranteeing a perpetual forest crop.

The new school serves also as a showplace for use of British Columbia

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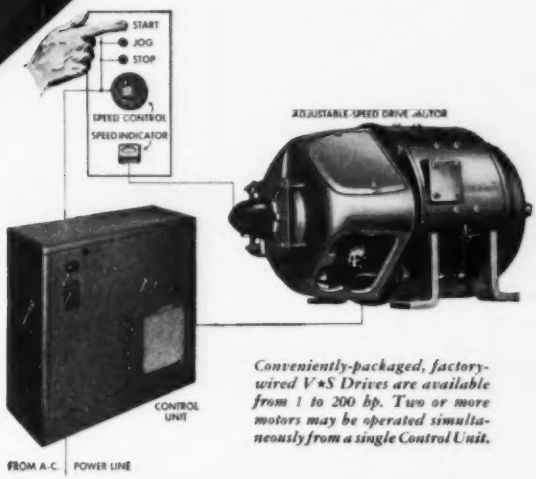

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woods in natural colors for paneling and exterior finish. All the commercial varieties of wood and most types of paneling developed in the past few years have been used in construction.

Green timber nursery on which the school is located has a capacity of 10,000,000 seedlings a year for reforestation. It is one of three in the province.

NEPCO's 25th Forestry Anniversary

NEKOOSA, Wis.—It was predicted here on October 6 that Wisconsin's paper and pulp industry would again receive the necessary wood pulp it needs for manufacturing from within its own borders when E. W. Tinker, executive secretary of the American Paper & Pulp Ass'n., stated that not only will the state supply its own mills which are producing at the rate of 4,800 tons of paper and allied products daily, but it will again export pulpwood. Mr. Tinker and leading paper mill executives spoke at a dinner celebrating the 25th anniversary of the industrial forestry progress of the Nekoosa-Edwards Paper Co. The company started plantations of jackpine and Norway pine and other species in 1924. It has an estimated 120,000 acres of growing timber in central Wisconsin.

The speakers pointed out that the rapid growth of pulp supplies in this state in the last few years symbolizes the progress that public and private agencies have made in rectifying forest devastation of two generations ago. The fact that Nekoosa-Edwards and other paper firms plan to harvest pulp wood on their own lands, and those lands will soon produce a yield equal to the manufacturing demands of the company's plants was held as proof that the co-operation in forestry work in the last 25 years was a valuable enterprise.

Conservation department leaders at the meeting recalled that it was 25 years ago that the state legislature adopted the forest taxation act which made it possible for paper mills and private owners to initiate their forestry management program.

"Wisconsin is now and will be in the lead in America in the economical business of growing wood," Mr. Tinker said.

Other speakers at the dinner were: Chairman Charles F. Smith of the state conversation commission; J. P. Aberg, senior member who worked with the industry 25 years ago to draft forestry laws; D. C. Everest, president of the Marathon Corp., and Governor Oscar A. Rennebohm.

Mr. Everest said the industrial life of a large part of the state depends on forestry growth. The mills' acres of forestry plantations in Wisconsin, he said, can assure stability in the manufacturing trade so vital to thousands of workers.

The pending state-private cooperation forestry resources inventory was explained by Mr. Smith as a move intended to collect figures on the total amount of forest land of Wisconsin and rate of growth of future annual products so that the paper trade can plan its future operations.

Helicopters Seed CZ Acreages

SAN FRANCISCO — Helicopters laden with evergreen seeds taken during a bumper cone harvest on its own Washington and Oregon forestlands during the last 60 days are being used by the Crown Zellerbach Corp. to broadcast seeds and seed pellets over 5,200 acres of logged-off or burnt-over lands, Chief Forester Clarence Richen reports. Hand-planting of seedlings, which will be a far greater project than last year, will not begin for several weeks. Lands to be restocked from the air are:

Clackamas Tree Farm, Molalla, Ore., 1,200 acres; Columbia Tree Farm, Veronica, Ore., 800 acres; Cathlamet Tree Farm, Cathlamet, Wash., 1,000 acres; Clatsop Tree Farm, Seaside, Ore., 800 acres; and Lake Tahkenitch Tree Farm, Gardiner, Ore., 1,400 acres. This project includes some rodent control seeding to protect areas being reforested naturally near seed belts and seed trees.

Al Moore, research biologist of the U. S. Fish and Wildlife Service, is advising Crown Zellerbach foresters on the degree of rodent control necessary to successful seed broadcasting.

Some of the seed will be placed in deep freeze banks as insurance against lean years. However, a great deal of it will go directly from the cleaning mill to the helicopter hoppers. This means that seed will go from seed trees to cleaning mill, to helicopters and back to the ground in the same areas from which taken, in about 20 days.

The restocking program is on lands serving pulp and paper mills of Crown Zellerbach at Camas, Wash., and West Linn and Lebanon, Ore., and is one phase of the company's program to attain sustained yield for its eight Pacific Northwest tree farms, totaling slightly more than 500,000 acres.

The Central Aircraft Co., at Yakima., Wash., has again been hired for the helicopter seeding job. This company pioneered the dusting of a looper area in Clatsop County four years ago and has operated seeding helicopters for Crown Zellerbach for the past two years.

Favored by a bumper crop of seeds which followed an almost barren 1949 seed year, Crown Zellerbach has crews of foresters, loggers and loggers' families harvesting choice cones. The planned cone harvest of 840 bushels from the Clackamas tree farm, 1,640 bushels from the Clatsop tree farm, 400 bushels from the Cathlamet tree farm, 1,740 bushels from the Columbia tree farm, and 400 bushels from the Port Angeles-Port Townsend area in Washington state is about three-quarters complete.

Douglas-fir and hemlock predominated in seed cones harvested. Other species were: Western red cedar, noble fir, silver fir, white fir and spruce.

Cones were rushed to kilns and cleaning mills in order to be ready for this year's broadcasting. Certified seed was also sent by air express to chemical firms for enclosing in seed pellets which will also be used in broadcasting this year.

Literally everything possible is being done to fully utilize nature's bounty in getting trees growing on every acre.

Ask Sweeping Canadian Forestry Act

OTTAWA — A resolution has been presented in the Canadian Parliament by the Minister of Mines and Resources, Hon. Colin Gibson, under the Canada Forestry Act regarding forest protection and experiment, control and management, providing: 'That it is expedient to present a bill to authorize the Governor In Council to establish as a national forest or as a forest experimental area lands belonging to His Majesty in the right of Canada and to exercise control and management thereof and construct works therein; to establish and maintain forest research laboratories; to assist provinces or owners of forests and to enter into agreements respecting the protection and development of forest lands. The Minister of Mines and Resources is authorized to appoint temporary officers and employes for the carrying out of the provisions of the Act."

"Birth of a Southern Pine" Film

ATLANTA—The third of a series of forestry educational films has been completed under the sponsorship of the Southern Pulpwood Conservation Ass'n., and the Georgia Forestry Commission, H. J. Malsberger, forester of the association, reports. It is titled "Birth of a Southern Pine" and portrays the process of reproducing a pine tree.

The film is 16 mm. in color, with sound, running about 15 minutes. The Southern Pulpwood Conservation Assn., 1506 First National Bank building, Atlanta, Ga., will sell the film for $60, including metal case and fiber shipping container and will have a limited supply available for loan.

ASSOCIATIONS . . .

ASME-ASTM New York Meeting

NEW YORK — The New York District of the American Society for Testing Materials and the Metropolitan Section of the American Society of Mechanical Engineers will meet in Room 502 of the Engineering Society's building, 29 West 39th street, at 7:30 pm, October 28. "Isotopes in Industry" will be the subject of a paper presented by Dr. John R. Dunning of the department of physics of Columbia University and "The Future of Nuclear Power" will be the subject of a paper presented by Albert L. Baker, vice-president of the Kellex

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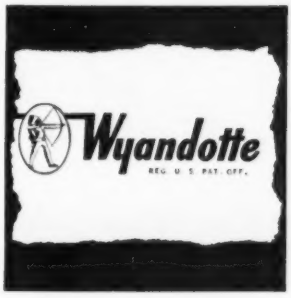

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BASIL ROGERS
Stabler & Baker, Ltd.
—demonstrating the Howard Smith Creaser.

Corp., New York. Both speakers were Manhattan Project Observers at Operation Crossroads at Bikini. Technical chairman of the meeting will be V. Weaver Smith (ASME) of the Lummus Co., New York, and program chairman, E. P. Pitman (ASTM) of the Port of New York Authority.

N. Y.-Canadian Supt's Meet

PLATTSBURG, N. Y.—The 1949-50 officers of the New York-Canadian Division of the American Pulp & Paper Mill Superintendents Ass'n., Inc., elected during the September 8-10 meeting of the Division at Hotel Champlain, are Donald R. Dick, Howard Smith Paper Mills, Ltd., chairman; H. S. Cutler, United Board & Carton Corp., first vice-chairman; C. E. Cole, Mutual Box Board Co., second vice-chairman; and F. A. Dieckbrader, Hinde & Dauch Paper Co., of Canada, Ltd., third vice-chairman.

J. O. Julson, Diamond Match Co., served as chairman of the Division for the year just completed. Serving with him were Mr. Dick as first vice-chairman, Mr. Cutler as second vice-chairman, Mr. Cole as third vice-chairman, Elwood C. Keyser of the Diamond Match Co., as secretary, and Henry A. Horstmann as treasurer.

The program included the presentation of the following papers: Paperboard and Felt Group meeting—"Elements Controlling Formation of Paper in Cylinder Vats," an illustrated talk by Allen A. Lowe, sales promotion manager, Sandy Hill Iron & Brass Works; "Suction Rolls on Tissue Machines," by Emil A. Glauner, sales engineer, Downingtown Mfg. Co.; "Water Removal by Vacuum at the Wet End of a Paper Machine," an extemporaneous talk by Carleton Clark of the Clark & Vicario Co., and "The Howard Smith Creaser," a demonstration and talk by Basil Rogers of Staebler Baker, Ltd.

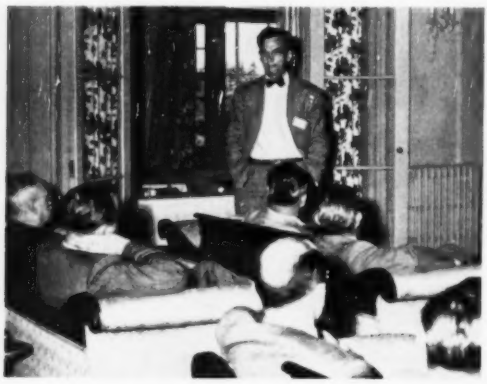
The Paperboard and Felt group meeting, before which Mr. Lowe spoke, was conducted by Chauncey E. Cole and Carl E. Reynold. The other papers were presented in a general session over which J. O. Julson presided, with D. R. Dick as co-chairman.

A meeting of the Fine Paper and Tissue group, with A. T. Gardner as chairman, and F. A. Dennis as co-chairman, was devoted entirely to discussion.

Among the subjects that came up for airing were: pitch, grainy edges, felt seams, and nylon felts.

The afternoon of September 9 was given over to mill visits. The plants open for such visitation were: J & J Rogers Co., Ausable Forks, N. Y.; Diamond Match Co., Plattsburg, N. Y.; Imperial Paper & Color Corp., Plattsburg, N. Y.; and the New York & Pennsylvania Co., Inc., Willsboro, N. Y.

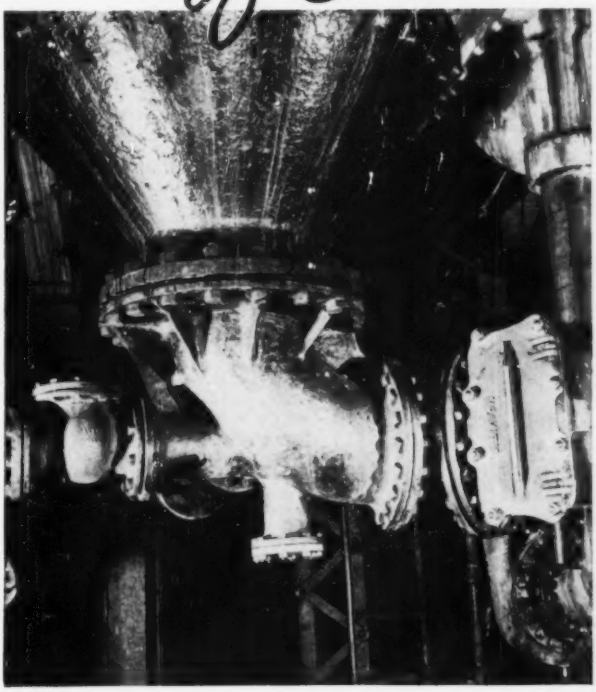
Life memberships in the Association were presented to several members of the Division during the past year: A. Owen Bowness of the E. B. Eddy Co.; P. D. Bradley of the Diamond Match Co.; Mr. Cole; and William J. Livington, retired, Fayetteville, N. Y.



CARLETON CLARK
Clark & Vicario
— discusses "Water Removal by Vacuum at the Wet End of a Beater Machine."

Officers for 1949, left to right: E. C. Keyser, Diamond Match Co., secretary; H. S. Cutler, United Board & Carton Co., second vice-chairman; J. O. Julson, Diamond Match Co., chairman; D. R. Dick of the Howard Smith Paper Co., first vice-chairman; E. E. Cole, Mutual Boxboard Co., third vice-chairman; and H. A. Horstmann, General Dyestuff Corp., treasurer.

Resistance to Adherence — another Cost-cutting Characteristic of Stainless Steel



STAINLESS Steel has built its reputation in the pulp and paper industry on its well established ability to resist corrosion, resist heat and resist hard usage. But there's another factor of resistance, not so widely recognized but highly important from the standpoint of production economies — resistance to adherence.

Stated simply, this means that certain materials which during processing have a tendency to cling to common steel (or to the coating with which such steel is protected), *will not stick to Stainless Steel.* Numbered among these materials are wood gums, resins, dyes, gums from rayon and other textile fibers.

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Machinery can be kept in operation for much longer periods without cleaning.

Errors in control of process temperatures will result in less damage to equipment.

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UNITED STATES STEEL

A. T. GARDNER
Provincial Paper Mills, Ltd.
and
F. A. DENNIS
Diamond Match Co.

Charles Reese, Nekoosa-Edwards Paper Co., president of the Association, addressed one of the sessions briefly. Other officers of the national organization present at the meeting were William H. Brydges, trustee and a past-president of the Association, and George W. Craigie, secretary-treasurer.

Norman O. Weil of the W. S. Tyler Co., was toastmaster of the banquet the last evening of the convention. The afternoon had been spent in golfing, in trap shooting or in just camaraderie, so the banquet gave the winners of the various prizes the opportunity to receive them.

Registration at this meeting totaled more than 350 persons, said to be the largest meeting attendance record of the Division which dates back to April 23, 1920.

AICE Symposium Features 'Water Problems of Process Industries'

NEW YORK—Program arrangements have been completed for the Third Annual Fall Symposium of the New York Section of the American Institute of Chemical Engineers at Hotel Statler, November 17. Various "Water Problems of the Process Industries" will be discussed, including substitution of air or seawater for surface water cooling towers, water treatment to reduce sealing, applications of compression distillation, and an overall survey of the economics of supplying water to the plant. W. E. Lobo of the M. W. Kellogg Co., is program chairman. Abstracts of the papers to be presented follow:

Compression Distillation, by A. Latham, Jr., Arthur D. Little, Inc., Cambridge, Mass.

The fundamental problems of the basic cycle, type of compressors, and fouling problems will be discussed. The costs of building and operating large installations will be noted both as to present operating costs and the probable extent of cost reduction through further development.

Sea Water for Cooling, by W. Z. Friend, International Nickel Co., Inc., New York.

Discusses factors affecting the performing of metals and alloys used for construction of heat exchange equipment where sea water is used for cooling. Velocity of the sea water is a factor of major importance because of its effect upon such tendencies as fouling by marine organisms, impingement attack in tubes, and dezincification (in the case of brasses). Data are presented showing the resistance of various metals and alloys including copper-base, nickel-base, stainless and ferrous materials to marine fouling, impingement and velocity attack, and forms of local attack. The use of chlorination and other water treatment also is discussed.

Air-Cooled Heat Transfer-Equipment, by K. D. Demarest, Fluor Corp., Ltd., New York.

Following a general description of air-cooled heat transfer equipment, various applications for fluid condensing and cooling services, the factors dictating its use, together with a listing of references as to such usage, will be presented.

While it would be of general interest and usefulness to present data covering heat transfer coefficients for various typical services, such information would necessarily have to be referred to the particular finned-tube elements for which it applies. Because lack of standardization limits the general value of this information, it is therefore not presented here. In lieu of this, material is presented dealing with the overall economics of miscellaneous installations. This consists of installed cost, air circulation power consumption, and ground space required per M B.T.U. per hour of heat transfer, for typical fluid cooling and condensing services. Maintenance costs are not stated because they have proven negligible in practice.

In closing, miscellaneous points such as methods of control, operational practices, and other matters, are discussed.

Water Supply Economics, by D. B. Hertz, Celanese Corp. of America, Newark, N.J.

Covers the economic aspect of water supply from the standpoint of investment, operating and maintenance costs. Actual costs will be given on typical installations of cooling towers and the economic aspect of their selection for various uses will be discussed.

Various types of industrial water treatment will be described from the standpoint of the cost of installing plants, cost of operation in materials and other expenses. A range of plant sizes for the various applications from 1,000 to 10,000,000 gallons per day will be covered.

The economic problems of obtaining water by the drilling of wells will be discussed and typical examples and general costs presented. The expense of maintaining circulating water systems in processing plants will be outlined.

Water Treatment Progress, by M. E. Gilwood, Permutit Co., New York.

Describes the impurities usually found in water supplies and tabulates the water quality requirements for a large number of industrial uses. Briefly mentions the status of water treatment fifteen years ago.

Describes the major improvements made in recent years in relation to their benefits, limitations and cost:

(1) Sludge contact equipment for cold and hot process lime soda treatment, and coagulation; hot phosphate treatment.

(2) Cooling Water Treatment; Alkalinity Control, Softening Chlorination, Slimacids, Threshold Treatment, Corrosion Control.

Mentions factors in selection of process to be employed.

Water-Cooling Towers, by H. E. Degler, technical director, Marley Co., Inc., Kansas City, Mo.

WATER is America's No. 1 natural resource. City summer-usage is continuously increasing and averages 150 gpd per person, with peaks of 250 gpd. Recent federal, state, and city conservation measures are cited. Many water mains and sewer pipe sizes are inadequate; stream and lake pollution is increasing. Discussion of annual rainfall, run-off, selection of wet-bulb design temperatures, water-cooling "range" and "approach" to wet-bulb.

Design factors for water-cooling equipment. Towers provide compactness, large capacity, flexibility, and all-around water-cooling performance for greater economy. Shows and discusses various types of recent equipment and selection performance, testing, operation and maintenance of water-cooling equipment.

Curves showing water-cooling tower performance vs. approximate cost, as related to water gpm, cooling range and approach will be discussed.

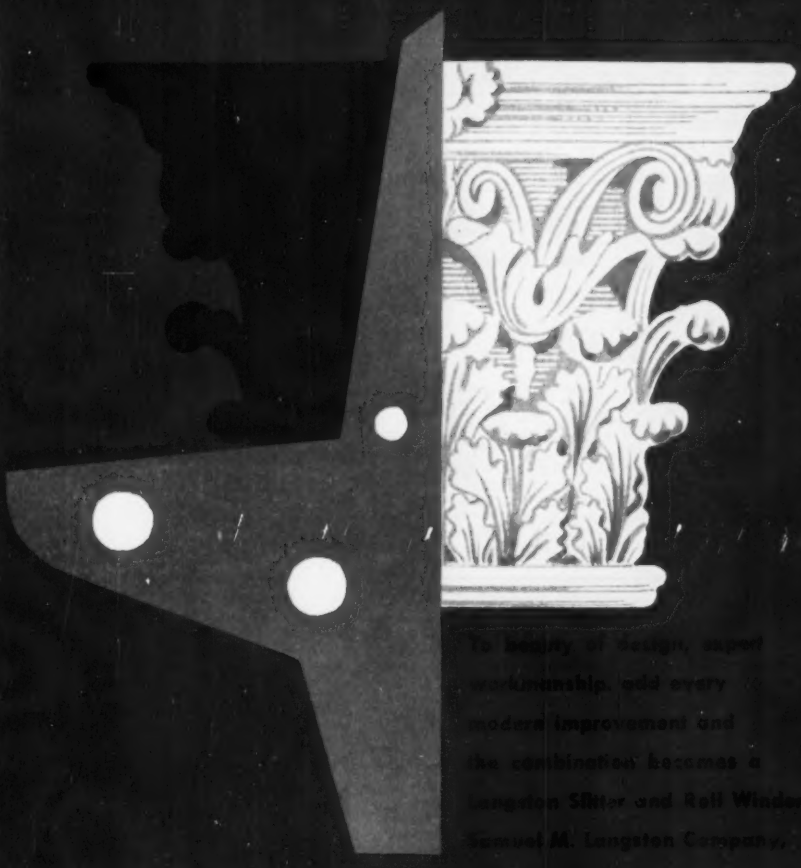
Ion Exchangers, by V. J. Calise, technical director, Graver Water Conditioning Co., New York.

Describes the various processes and ion exchangers now avaialble. The fields of application of each of these products in commercial plants and some of the limitations of each are presented.

The important factors in the design of ion exchange equipment are listed. The factors of quality and performance required for solving various plant problems are discussed.

The continuous charges for regenerant chemicals are as important in deciding the ion exchange materials selected for a given application as such factors as initial investment, quality of effluent produced and long term resistance to aggressive attack.

combine: to link closely together



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SLITTERS AND ROLL WINDERS

Comparisons of initial cost and regenerant costs are given for a number of ion exchangers on the sodium and hydrogen cycle.

Three typical commercially installed ion exchange plants including: (a) Zeolite softening of makeup boiler feedwater, (b) Zeolite softening and ion removal in a municipality and (c) Demineralizing and silica removal for a chemical manufacturing plant are discussed and design features and chemical operating costs presented.

P & PI 4th Engr. Conf.

BOSTON — The Fourth Engineering Conference of the Pulp and Paper Industry, sponsored by the TAPPI Engineering Division, will be held at Hotel Statler, October 31 to November 3. The program is as follows:

Sunday, October 30

3:00 p.m.—Registration.

Monday, October 31

8:30 a.m.—Registration.

9:15 a.m.—General Sessions, George H. Pringle, general chairman. Opening Remarks, by A. E. Bachmann, Missisquoi Corp., president, TAPPI.

9:30 a.m.—Mill Design and Economic Aspects Session, A. H. Johnson, consulting engineer, chairman. "Pulp and Paper Mill Building Design," by M. C. Celli, Rust Engineering Co.; "Paper Machine Drives," by Roland A. Packard, Holyoke Machine Co.

11:15 a.m.—Engineering Data Sheets Session, Henry J. Perry, consultant, chairman. Discussion of plans for supplementing the TAPPI engineering Data Sheet service.

2:00 p.m.—Engineering Research and Machine Design Session, P. H. Goldsmith, Pusey & Jones Corp., chairman. "Suggested Standardization of Spherical Bearings on the Wet End Drier Sections of Paper Machines," by G. H. Spencer, Torrington Co.; "Beta-Ray Basis Weight Gauge," by E. A. Crawford and M. Strain, Continental Paper Co.

3:30 p.m.—Materials Handling Session, G. H. Wadleigh, consulting engineer, chairman. "Conveyors in Pulp and Paper Mills," by S. L. Foster, Kalamazoo Vegetable Parchment Co.

Tuesday, November 1

9:00 a.m.—Steam and Power Session, Charles J. Sibler, West Virginia Pulp & Paper Co., chairman. "Recovery of Waste Heat in Paper Mills," by D. K. Dean, Foster-Wheeler Corp.; "Selection of Steam Pressures and Temperatures for Paper Mill Power Plants," by M. H. Dixon, St. Regis Paper Co., and W. C. Bloomquist, General Electric Co.

10:45 a.m.—Mill Maintenance and Materials Session, William McIntosh, Jr., Southern Corp., chairman. "Maintenance Costs in a Fine Paper Mill," by D. Ross-Ross, Howard Smith Paper Mills; "Use of Cement-Asbestos Pipe in the Pulp and Paper Industry," by C. W. Ziegenbusch, Mead Corp.

2:00 p.m.—Round Table Sessions: (A) Steam and Power, "Standardization of Steam Turbines for Paper Mills," by J. C. Spahr, Westinghouse Electric Corp., and J. L. Kerr, General Electric Co.; Discussion led by H. R. Arnold, Union Bag & Paper Corp.; "Acid or Solvent Cleaning of Boilers," by C. H. Groom, Dowell Inc.; Discussion led by M. F. Schnaufer, Detroit Sulphite Pulp & Paper Co.; "Instrumentation of Steam and Power Plants"; Discussion led by F. E. Hutton, Babcock & Wilcox Co. (B) Mill Design and Engineering Aspects, "Paper Machine Drives"; Discussion led by R. A. Packard. (C) Engineering Research and Machine Design, "Stock Flow and Pipe Friction Drop"; Discussion of Project of the Hydraulics Subcommittee led by K. J. Mackenzie, Eastman Kodak Co., chairman. (D) Materials Handling, Discussion of S. L. Foster's paper and Miscellaneous Inquiries, led by George R. Wadleigh, chairman. (E) Paper Manufacture (Fourdrinier), "Paper Machine Stock Inlets"; Discussion led by Noel Phillips, Champion Paper & Fibre Co., chairman.

7:00 p.m.—Sponsor's Dinner.

Wednesday, November 2

9:00 a.m.—Drying and Ventilating Session, A. E. Montgomery, J. O. Ross Engineering Co., chairman. "Water Heating System and Briner Economizer," by A. C. Smith, Newton Falls Paper Co.; "Heating and Ventilating the M. & O. Paper Co. Bleachery," by J. H. Davidson, Minnesota & Ontario Paper Co.

10:45 a.m.—Electrical Engineering Session, A. S. Goodrich, Hammermill Paper Co., chairman. "Power Requirements for Paper Machines," first report on Committee Project, by A. S. Goodrich, chairman; "Electrification of a Pulp and Paper Mill," by J. C. Lynch, Hammermill Paper Co.

12:30 p.m.—TAPPI Engineering Division Luncheon, A. E. Bachmann, chairman. Speaker: Dr. George R. Harrison, Dean of Science, Massachusetts Institute of Technology—"The Control of Energy."

2:00 p.m.—Round Table Sessions: (F) Mill Maintenance and Materials, "Effect of Carbon Powder Preparation on Plain Carbon Steels," by Milton Stoll, formerly Professor of Metallurgy, Polytechnic Institute of Brooklyn. Question Box on Maintenance led by Wm. McIntosh, Jr., chairman. (G) Electrical Engineering, Discussion of Power Requirements Report led by A. S. Goodrich, chairman. (H) Drying and Ventilating, Discussion of Air Filtration, led by A. E. Montgomery, chairman. (I) Paper Manufacture (Cylinder), Discussion of Cylinder Machine Operation, led by A. E. Bachmann. (J) Data Sheet, Organization of Data Sheets Committee and Outline of Program of Work, led by Henry J. Perry, chairman.

Thursday, November 3

9:30 a.m.—Plant Visits Leave from Hotel Statler: (1) Walpole Trip: To Bird & Son, Inc., Bird Machine Co., Foxboro Co., and Draper Bros. Co. plants. (2) Worcester Trip: To Rice Barton Corp., Norton Co., Riley Stoker Corp., and Lodding Engineering Co., plants. (3) Lynn Trip: To General Electric Co., River Works. (4) Hyde Park Trip: To Sturtevant Div., Westinghouse Electric Corp. plant.

Note: Transportation to the plants mentioned in these trips will be furnished and luncheon served through the courtesy of the host companies.

Room Reservations: Adequate housing facilities have been arranged at the Statler Hotel. In making reservations be sure to mention the TAPPI Engineering Conference. In past conferences a very large number arrived on Sunday. Registration facilities will be available at 3 p.m.

New Products at 22nd C. I. Expo.

NEW YORK—A wide array of new substances will be disclosed at the 22nd Exposition of Chemical Industries, to be held in Grand Central Palace, New York, November 20 to December 3.

More than 400 new chemicals and chemical specialty items introduced during the past year by various laboratories will be featured at one of the exhibits and a manufacturer of organic chemicals and compressed gases for the research chemist is presenting more than 74 different gases and upwards of 1,800 different organic chemicals.

An innovation by one manufacturer is a sequestering agent described as an organic water soluble ion exchanger.

Another exhibitor offers 25 hot melt concentrates of butyl rubber and polyethylene for improving the properties of waxes, vinyl printing inks, also mastic, vinyl and laminating adhesives, latex plush backing, organosol coatings for artificial leather, tackifiers, grease-proof coatings, as well as polymerized emulsions, dispersions and solutions for use in compounding adhesives, greaseproofing paper, sizing textiles and other applications.

New Materials Significant

Especially significant will be developments in structural materials. One new material of construction, "Tanta-Clad," consists of tantalum-surfaced nickel, or some other structural material.

Aluminum, magnesium and alloy powders are of special interest, due to their growing adoption as chemical reagents, as well as in the manufacture of protective coatings and otherwise. One of the newest applications in this field is the use of unpolished aluminum powders as jet-engine fuels. Other developments to be seen for the first time at the forthcoming exposition include a new filter cloth made of Hastelloy, a "super corrosion resistant" stainless steel in sheet and plate, in addition to the bar stock, strip and tubing forms introduced two years ago; tube fittings in steel, stainless steel and aluminum, and valves made to meet special requirements, such as handling hazardous fluids, or steam pressures up to 1,500 pounds, which are available in stainless steel, pure nickel, monel, inconel and even pure silver.

Also to be seen are all-porcelain valves, piping and sight glasses. A product considered impossible of manufacture only a few years ago is glass piping six inches in diameter.

Of Scientific Interest

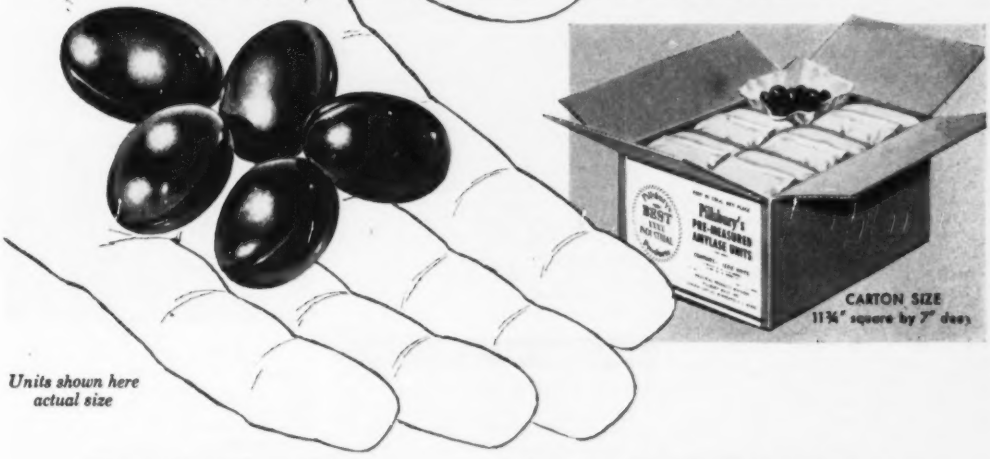
Numerous exhibits will be of high scientific interest because of their application in research; others because they introduce new methods of production control. In one instance, improvements in the mass spectrometer have extended its range in quantitative analyses to samples containing water and alcohols, as well as mixtures of chemical solvents, organic intermediates and derivatives.

Another exhibitor will show a micromanipulator and micro-forge for performing various operations under microscopic magnification; also ampulized reagents — a new method of packaging rare chemicals. "The first complete electrophoresis laboratory completely contained in one compact cabinet" will be shown for the first time by one of the well-known instrument makers, along with a new cycling temperature-humidity cabinet built to meet the specifications of the U. S. Signal Corps.

Revolutionary New Enzyme Development for Coating and Tub Sizing!

Pillsbury's PRE-MEASURED AMYLASE UNITS

PAT. PENDING



Units shown here actual size

For the First Time... Enzyme Charges in Soluble Capsules

In the preparation of coatings and tub sizings from starch, the new Pillsbury's Pre-Measured Amylase Units offer you—

Simplicity—No more weighing or measuring of enzymes. *Just count* the small number of units required and toss them into the slurry.

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Accuracy—No more errors in weighing and measuring enzymes. These stable enzyme units retain their potency indefinitely with ordinary care.

Superiority—The enzyme in Pillsbury's Pre-Measured Amylase Units has been selected because of its superior starch-converting properties. It assures end products of maximum adhesiveness and with minimum of specks.

Convenience—Easy to use and store. These units come packed in small cartons, 11¾" square and 7" deep. This compact size permits speedy parcel post delivery, minimum storage space, and enables your plant to operate on smaller inventories.

Write for Full Information—Pillsbury's technical service offers you the experience and technical know-how of men seasoned in the application of enzymes in industry. They are at your service and will cooperate with your organization in running trials without obligation.

Pillsbury's BEST XXXX INDUSTRIAL Products

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PILLSBURY MILLS, INC., INDUSTRIAL PRODUCTS DIVISION, MINNEAPOLIS, MINNESOTA

An instrument maker whose products are applicable wherever analyses are based on the transmission, absorption, reflection, fluorescence or scattering of light, is offering densitometers for filter paper, used in a new method for the separation of amino acids; multiplier-photometers, for microphotometric quantitative histochemistry and highly sensitive densitometers for radiation protection in radio activity laboratories. Described as an automatic fraction collector is a new machine also used in the relatively new field of separation by chromatography. It is applicable in studies of amino acids, protein analysis; for the study of cell growth in cancer.

Innovation in Equipment

New chemical manufacturing equipment, possibly in greater variety than ever before, will constitute the principal attraction of the 22nd Exposition for many visitors. New is a disintegrator for size reductions in wet and dry applications, a screw-feed unit for pre-cooling or pre-heating applications and also a new and inexpensive controlling unit designed to maintain the rate of feed at or near the maximum capacity of the pulverizing or grinding unit. A pump manufacturer presently field-testing a new line of centrifugals made of a plastic material, expecting to show the first production models at the Palace.

A manufacturer of filters, mixers and agitators has just added a line of stainless steel storage, settling and mixing tanks of its own manufacture, which will be on view for the first time. Another first showing is to be a dewatering operation on a vibrating screen, the unit in question being designed for laboratory or pilot plant operation.

For pilot plant operation another exhibitor will show a filter incorporating both string and scraper discharge; said to be the only machine of its kind at present available. Still another will offer a new self-cleaning pressure leaf filter along with a line of filter frames made of plastic. There will also be a new flush-off filter, applicable to rough filtration of beer or any other liquids where rapid cleaning is needed and large amounts of solids are encountered. Along with this unit will be a self-cleaning filter, termed "about the fastest complete self-cleaning filter now available."

A manufacturer of metering equipment will feature a line of chemical meters made of stainless steel, affording volumetric measurements of many chemicals with no metal other than stainless steel exposed to the liquid. A manufacturer of pumps is to show a large sized sectionalized model of a compressor equipped with a "non-lubricated cylinder for compressing air or gas which must be oil-free.

To lighten the weight of equipment for loading and unloading tank cars, a manufacturer of ball joints will display a six-inch joint having a total weight of only 46 pounds; the key material, magnesium. The latest model of a well-known maker's vacuum drum dryer brings the advantages of low-temperature vacuum drying to a greatly increased number of heat-sensitive chemicals, pharmaceuticals and food products.

The newest thing in the way of permanent-magnet separation is an agitator separator feeder, which causes magnetic particles literally to "walk away" from the mass of material in process, while another item in the same line, never previously displayed, is a "ferrous filter" designed to remove fine iron from liquids.

The Exposition is under the management of the International Exposition Co. with permanent headquarters in Grand Central Palace, New York. Charles F. Roth is manager and E. K. Stevens, associate manager.

Byerly NCPMTO Managing Director

WASHINGTON—The National Council of Private Motor Truck Owners, Inc., reports the resignation of Leon F. Banigan as managing director of its national headquarters here and the appointment of H. Scott Byerly as his successor.

After ten years of noteworthy service and achievement with the organization since its establishment in 1939, Mr. Banigan is leaving the Council to take over the editorship of *Fleet Owner* magazine.

Mr. Byerly has served as Mr. Banigan's administrative assistant during the past five years

EQUIPMENT . . . .

Counter Rotating Mixer

The counter rotating mixer was designed to provide the laboratory with mixing speeds and results generally available only in large production

equipment. Using two motors driving two concentric oppositely-rotating shafts, propeller equipped, the mixer produces an annular rather than a circular flow; thus all materials, including heavier particles, are rapidly drawn into the propellers where they pass through the shearing zone. It is said that there is practically no cavitation, no centrifugal effect, also that the liquid level remains essentially constant, allowing the use of nearly-filled containers. Unit is designed to allow relative speeds from approximately 200 to 12,000 r.p.m. and to provide a continuously variable speed control through a general Radio Variac which is mounted with on-off switch on the support stand base. For protection from corrosive fumes, motors have been completely enclosed and all immersible parts constructed of type 302 stainless steel, with the exception of bottom guide bearing of leaded bronze. Available for either 110 or 220 volts a.c. or d.c., and with shaft lengths and propeller designs as required. For details and prices, write to Brookfield Engineering Laboratories, 004 Porter street, Stoughton, Mass.

Upending Device

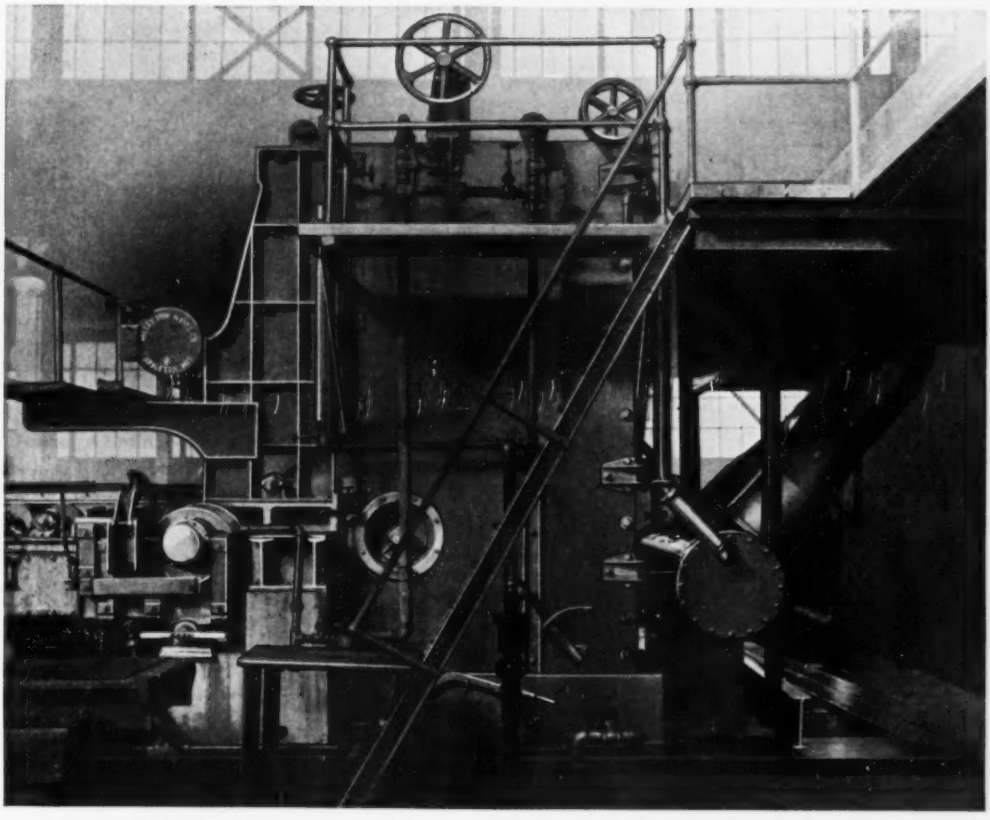
The upender is designed for use with fork-lift trucks to speed the turning of rolls of paper or other heavy cylindrical items 90 degrees from horizontal posi-

tion to vertical, or vice versa. It is available for both gas and electric fork-lifts of 2000-pound capacity. The load to be moved is grasped around its circumference by a set of fork arms actuated by a hydraulically-operated clamping cylinder. Sufficient squeezing pressure is available to hold an average load securely by friction, without employment of ribs, lugs or brackets, the manufacturer states. Special rubber-covered arms can be provided for handling items which require protection. Maximum width of device is 35 ins., and standard arms will handle items of diameters from a minimum of 15 ins. to a maximum of 31 ins. Special arms for larger or smaller diameters are available. For details and prices, write to Clark Equipment Co., Industrial Truck Div., Battle Creek, Mich.

Small Diesel Locomotive Crane

The 10-ton Diesel locomotive crane was engineered for high-speed nimble performance in jobs where use of a larger crane would be uneconomical. Machinery is compactly arranged with all units easily accessible. It has a full-vision cab, tandem band air-controlled clutches, and will perform all operations simultaneously. Other design features include welded construction, ball and roller bearings, precision cut gears running in oil, and a quick-action boom hoist under positive control at all times,

BETTER PAPER, FASTER



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Stock Entrance Equipment

An inadequate inlet and headbox cannot let you compete successfully. That is where the *quality* of your sheet is made or marred. Your sheet can be no better than its initial formation on the wire. Antiquated Stock Entrance Equipment is costing YOU money.

VALLEY IRON WORKS COMPANY
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it is stated. Three speed selective transmission allows shifting from one speed to another while crane is in motion. Travel speeds in the respective ratios are 2.25 m.p.h., 8.0, and 15 m.p.h.; drawbar pulls are 8160 lbs., 2060 lbs.,

and 950 lbs. Model 410 has a 7500 pound single line hoisting pull at 235 f.p.m. Slewing speed is 2.5 r.p.m. For literature and prices, write to Advertising Dept., American Hoist & Derrick Co., St. Paul 1, Minn.

Wall-Mounted Starter

The wall-mounted, full-voltage starter is designed for applications—such as chemical, liquid fuel, milling, coal handling—where corrosive vapors or combustible dust-laden atmospheres are present. Mechanism is immersed in oil and sealed from the atmosphere. Unit is weather-proofed for outdoor installations. Starter enclosure is said to be entirely corrosion-resistant; head casting is of aluminum alloy; all exposed hardware is stainless steel; and steel tank is coated with aluminum paint on the outside and marine spar varnish within. Built for simple installation and easy inspection, the starter is designed to control squirrel cage motors and the primary of wound rotor motors of 350 h.p. or less at 2300 volts. Either undervoltage protection or release may be incorporated in control circuits used in conjunction with the starter. A built-in drum type, multi-stage auxiliary switch provides for extra circuits when desired in the control system. Portable tank lifter for simplified inspection is available as optional equipment. For details and prices, write to Allis-Chalmers, Milwaukee, Wis.

Bronze Plated Plug

A patented bronze plated plug for three-inch cores has just been marketed. Features announced by the manufacturer are its radial reinforcing ribs to add to the strength of the plug; disc wheel type construction for added strength; hole flange turned outward for easier accessibility in tumbling. Bronze-plating is designed to supply the cleaner plug which is a requirement of the food industry. For descriptive circular and prices, write to Badger Plug Co., Appleton, Wis.

SUPPLIERS . . . . .

The Elliott Co., Jeannette, Pa., has acquired the business and assets of the Crocker-Wheeler Division of the Joshua Hendy Corp., Grant B. Shipley, Elliott board chairman, reports. The Elliott Co., whose president is W. A. Elliott, was organized in 1901. It has plants at Jeannette, Ridgway, Pa., Springfield, Ohio, and Newark, N. J. The Ridgway Division manufactures large electric motors and generators, and is an outstanding supplier of rotating machinery for large electric generating stations. With the addition of the Crocker-Wheeler Division, Elliott now has a complete line of a-c and d-c motors ranging in size from one hp. to 25,000 hp. Formerly the Elliott line did not include motors under 200 horsepower. Crocker-Wheeler is one of the oldest manufacturers of motors and generators, dating back to the C & C Electric Motor Co., founded in New York City in 1885. The Crocker-Wheeler Electric Motor Co., was organized in 1888. In 1893 operations were moved to Ampere, N. J., where the plant is presently located. The Crocker-Wheeler Division of the Elliott Co., will continue to operate under its previous management with Charles A. Butcher as general manager. Mr. Butcher has also been elected a vice president of Elliott Co.

Corn Products Refining Co., New York, reports that Carroll R. Keim, who has represented the Chemical Division of the Corn Products Sales Co. in the Chicago area for the past two years, will shortly assume new duties as technical representative for the Foreign Department of the Corn Products Refining Co. Mr. Keim's headquarters will be in Europe. He will be succeeded in Chicago on November 1 by John W. Davey, who represented the Chemical Division in the Pittsburgh area and David L. Richardson, Jr., formerly of Mellon Institute, will succeed Mr. Davey in the Pittsburgh area on that date.

U. S. Rubber Co's William T. Keenan has retired as district sales manager of the Chicago branch, mechanical goods division, after 39 years of service with the company. Joseph A. Conlon, formerly assistant district sales manager, has been named to succeed Mr. Keenan.

Andrew G. Spiegelhalter, president of the Pusey & Jones Corp., Wilmington, Del., has been requested by Gov. Elbert N. Carvel of Delaware to serve as the Delaware member of a tri-state committee to promote the proposed deepening and widening of the Chesapeake & Delaware Canal. Maryland and Pennsylvania are the other states to be represented on the committee.

Food Machinery & Chemical Corp., San Jose, Calif., has named Gerald F. Twist manager of its Peerless Pump Division with headquarters at Los Angeles, succeeding Francis F. Fairman, Jr., who is resuming his former association with the General Electric Co.

Purolator Products, Inc., Newark, N. J., has elected Jules P. Kovacs vice-president in charge of engineering. Mr. Kovacs, who joined the firm as a design engineer in 1929, has been chief engineer since 1941.

Babcock & Wilcox Tube Co., Beaver Falls, Pa., has named J. R. Connell assistant purchasing agent. He will be located in the offices of Charles V. Spahr, purchasing agent.

C.C. & E. CO., WORKS MGR.

Milton T. Carleton, works manager of the Cleveland Crane & Engineering Co., Wickliffe, Ohio. . . . Previously, for 14 years, he was works manager of the E. W. Bliss Co. Cleveland division.

International Trade Organization Important to American Business[1]

By MORRIS S. ROSENTHAL*
President
Stein, Hall & Co., New York

With the passage of the Atlantic Pact and the renewal of the Reciprocal Trade Agreements Act the International Trade Organization now comes to the fore as the next vital piece of legislation pertaining to American participation in international economic affairs. . . .

The Havana Charter constitutes a realistic, businesslike effort to solve many troublesome dislocations in the postwar trade of all nations, including our own. As such, it is of direct and immediate advantage to each and every American businessman. . . .

Liberal Trade

The United States is committed to a policy of liberalizing trade among nations to the greatest possible extent so that all peoples can benefit through an expanded exchange of goods and services with each other. In its essence Liberal Trade means the maximum competition in the free markets of the world that will be helpful in attaining both national and international objectives of higher standards

[1] Excerpts from a speech given at the Boston Conference on Distribution, October 11, 1949, on "Will the Havana Charter Help World Trade?"

* Mr. Rosenthal is president of the National Council of American Importers, vice-chairman of the Foreign Commerce Department of the U. S. Chamber of Commerce, and trustee of the U. S. Council of the International Chamber of Commerce.

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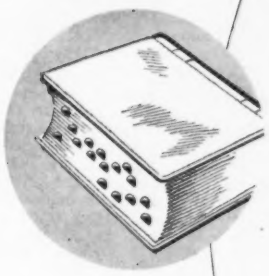

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of living, full employment, and conditions of social progress and development. Liberal Trade assumes the democratic process of growth, gradual change and compromise in terms of everyday realities and pressures by all peoples and among all peoples. Liberal Trade does not mean the ruthless imposition by any one nation of its views or wishes upon the national objectives of any other nation. It does not mean the adoption by any nation which is now in economic difficulties of impossible measures which might adversely affect its standards of living and production. Current difficulties may well warrant the retention of controls by some which are not needed by others. Liberal Trade does mean the effective and equal cooperation by all to remove the many maladjustments, economic disparities and uncertainties that today impede and prevent the free flow of goods, capital, and manpower. Only if we recognize the proper meaning and functions of Liberal Trade can Liberal Trade serve to accomplish the objectives of our foreign economic policy. . . .

Implement American Foreign Economic Policy

The ITO is the logical instrument to implement American foreign economic policy. It is the organization of the United Nations in which its members can work together to eliminate trade barriers and so make possible the growth of production and the expansion of trade among its members. Members of the ITO are committed to the principle of taking concrete action toward lessening and ending trade barriers such as high tariffs, quotas, discriminations, cartels, inefficient customs procedures, and many other invisible trade barriers. Membership in the ITO does not in itself commit a nation to specific action. No nation can be compelled to lower its tariffs. But membership in the ITO does commit all nations to principles of cooperation in the field of international economics and, through joint action, to an attempt to solve international economic problems in a way beneficial to all and harmful to none. . . .

Reduce Uncertainty

On the operating level, the ITO will immediately reduce the extensive uncertainty now existing in international trade. Exporters will be able to know beforehand exactly what hurdles in red tape and costs their goods will have to face. Today, these facts are often not known until merchandise is about to be landed.

American traders will benefit from having other countries establish uniformity in methods of valuation, customs procedures and classifications, and from having customs changes announced in advance. The ITO will also start at once to remove one of the greatest barriers to international trade — lack of adequate information. The organization is specifically required to study and collect data on customs procedures, labor practices, subsidies, and international taxes.

The aims of the ITO have been endorsed by business groups in all countries. It is absurd to suspect that there is any attempt to establish a supra-national trading body which would work against the interests of private enterprise in foreign trade. The Charter represents a sincere attempt to reestablish multilateral trade for the benefit of commercial traders in all nations.

Reflects Present Difficulties

The reservations and exceptions in some of the articles pertaining to restrictive policies should not be magnified beyond their importance. It is far better to present the world with a charter that exhibits a candid recognition of existing economic difficulties than to encourage the delegates to adopt a document to which they could not adhere afterwards.

If we American businessmen cannot find sustained markets for our exports, many of our most important mass-production industries will be in trouble, with grim consequences for our whole economy. Yet we certainly cannot sustain the present high level of our exports unless other countries can reduce their trade restrictions by increasing their dollar earnings. To prevent a serious contraction of our trade and to solve some of the world's most crucial economic ills, bold and concerted measures are required to expand trade and open up markets.

The ITO offers us a firm foundation upon which to start taking such bold and concerted measures. But unless the United States approves the Charter, it is generally conceded that there will be no ITO.

Although there are some things that we American businessmen might wish to put into the Charter that are not now in it, and although we dislike some of the exceptions to it, we can have confidence that our government negotiators will be able to improve many of its terms and conditions after the ITO comes into being. Furthermore, there is so much in the Charter that is good for American business that we should quickly and enthusiastically endorse it and urge that our government approve it. For it not only prohibits other countries from acting on their own in ways that would hurt our trade, but it actually binds them to many things which will be of great help to us in the difficult years that lie ahead. . . .

Challenge to American Businessmen

In a free enterprise system leaders of commerce and industry have a grave responsibility to the people as well as an obligation to themselves and to the system. If the business leaders of the United States do not take the side of progress, then the system may well fail because of their timidity and because of their reluctance to lead. There is a challenge to us as businessmen in a troubled world, in a world in which we stand as the champions of freedom. If we fear what other nations are doing, if we fear to enter the ITO because we dislike some of the provisions that others want, if we fear for our own leadership in improving the Charter, then I would fear for continued progress and strength at home. But I do not believe that the American businessman is afraid of his responsibilities or afraid of the future. And as an American businessman I am willing to accept the responsibilities of cooperation with other nations in the hope that through joint action there will be a spread of freedom throughout the world.

SANDY HILL AND PERIPAC

Sandy Hill Iron & Brass Works, Hudson Falls, N. Y., has acquired exclusive manufacturing rights on Peripac, a molded corrugated sheet made on a new type of stock forming-machine, patents for which have recently been issued to Perry Processes, Inc., Cleveland. . . . The machine consists of a forming or wet end and an air dryer. It does not require presses or felts, but delivers the molded product directly to the air dryer. . . . Following the dryer is a slitter and rewinder which puts the sheet into the conventional roll form. . . . The sheet comes from the forming machine as a continuous sheet. . . . In forming the sheet, webs and pads are integral, with an arch molded under each pad. This construction creates a dual cushion with double shock absorbing property. . . . Peripac is said to be extremely tough and flexible, although much lighter in weight than similar packing mediums. It averages approximately 45 to 50 pounds per 1,000 square feet, yet it is said to have many times the protective and cushioning effect found in conventional packing materials. Peripac lends itself to easy wrapping of irregular shaped packages and provides maximum protection for a minimum quantity of material. . . . Purposes for which Peripac is recommended are: as protection for parcel post and express packaging; department store deliveries; furniture and appliance wrapping; protection for china and glassware; store window displays; box car liners; wooden crate and shipping case liners; corrugated carton partitions; and for wrapping rolls of paper such as newsprint. . . . Peripac is an unusually low-cost product, partly because of its lighter weight, but mainly because it is made from inexpensive waste materials.

Those days are gone forever!

SUPT.:
"What's he kicking about? That shipment was just the same as what we sent him when he couldn't get tonnage from anybody else. He didn't complain of the finish so long as he got the tonnage."

SALES MGR.:
"Those days are gone forever. Buyers are no longer worried about sources of supply. They are looking for better finish. If we don't have it they have a right to kick—and to refuse to accept delivery."

For every press of every paper and board machine there is a Hamilton Felt that will remove more water at higher speed and give your sheets better finish at lower cost.

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• Miami Woolen Mills •

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See for yourself how the unequaled completeness of the broad Crane line can satisfy your needs. Your Crane Catalog contains the world's most comprehensive selection of valves, fittings, pipe and accessories . . . in brass, iron, steel and corrosion-resistant alloys. Your local Crane Branch or Wholesaler is well-stocked to supply piping equipment for any installation.

A Pulp and Paper Mill Flow System, for example, can be equipped from end to end by this **One Source of Supply**—Crane. And that means simplified piping procedures all along the line . . . from design to erection to maintenance work. **One Responsibility** for materials helps to give you better installations, avoids needless delays. **High Quality** in every item from Crane assures dependable piping performance throughout your entire system.

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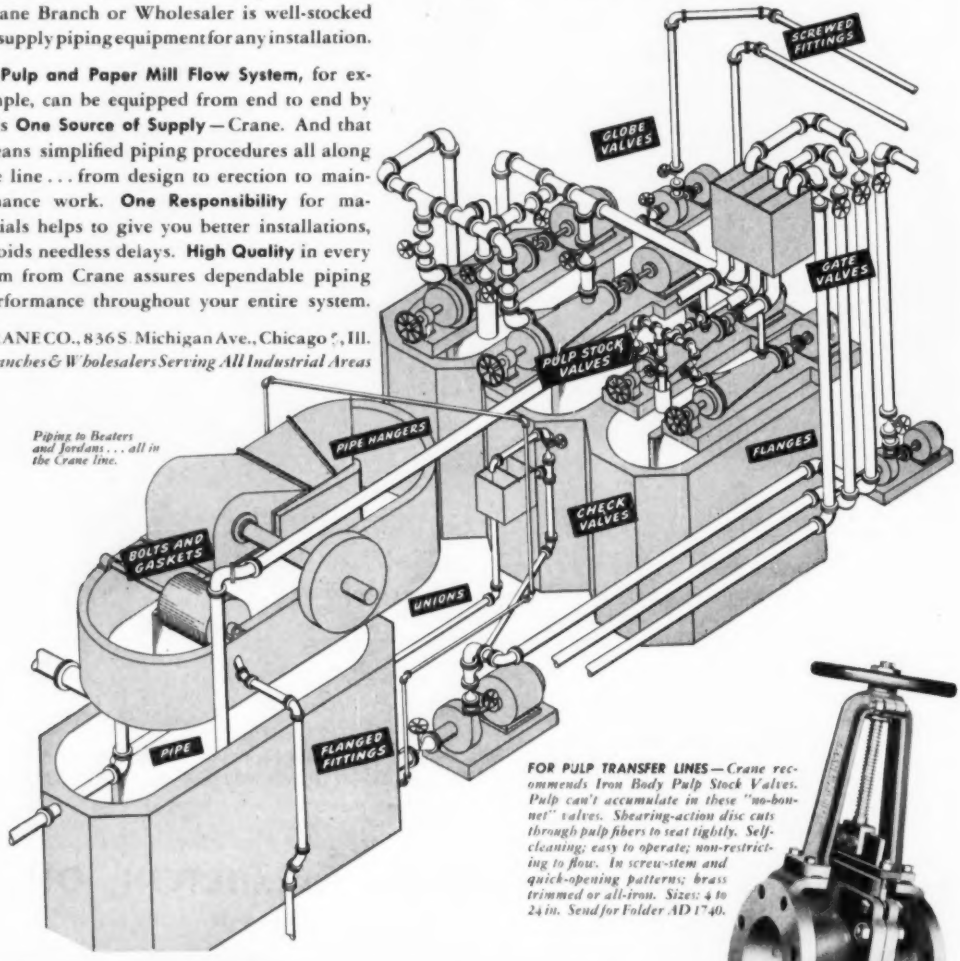

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Pulpwood Handling in the Lake States

By
O. O. KOSKI
Forest Engineer, Minnesota and Ontario Paper Company, International Falls, Minnesota

Abstract

Pulpwood handling in the Lake States has become a vast operation in the bulk movement of raw material from the forests to the numerous conversion plants. This paper covers the various steps necessary and equipment used in pulpwood handling, and gives a general idea of the methods and the equipment employed to annually supply the Lake States pulp, paper and paperboard mills with their all important raw material.

Introduction

To illustrate the relative size of the industry which is dependent on pulpwood being delivered, Lockwood's Directory lists 112 pulp, paper and paperboard mills in the Lake States of which about 47 percent are in Wisconsin, 43 percent in Michigan, and 10 percent in Minnesota. The 1947 Annual Report of the Lake States Forest Experiment Station states that the average drain of rough pulpwood for the ten year period 1935-44 was 2,349,000 cords annually. At a conservative figure of 20 dollars a cord, the above volume of raw material represents an annual outlay of approximately 47 million dollars. Pulpwood handling is big business.

The subject of pulpwood handling in the following discussion has been divided into its natural steps of falling, skidding, bucking, loading and hauling.

Falling

The species commonly used for pulpwood in the Lake States are: Black spruce *(Picea mariana)*, white spruce *(Picea canadensis)*, balsam fir *(Abies balsamea)*, jack pine *(Pinus banksiana)*, aspen *(Populus tremuloides)*, tamarack *(Larix americana)* and hemlock *(Tsuga canadensis)*. Most of the pulpwood is still cut in the old conventional manner with axe and saw. Portable power saws, however, are being used more and more each season.

Pulpwood is cut by two basic methods—either in four-foot or eight-foot pieces or in tree lengths. Most of the annual harvest is cut in the shorter lengths for which payment to the cutter is made either on a piece-rate, so much per stick or stacked cord, or a straight hourly rate basis. With the exception of larger pieces, the cutting of shorter lengths involves not only falling and trimming; but includes bucking into the specified shorter lengths and piling along strip roads. A strip of timber sixty to one hundred feet in width

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O. O. KOSKI

and the length of a forty is assigned an individual cutter. A strip road, not exceeding ten feet in width, is cut down the middle of the strip along which the pulpwood cut in short lengths is piled according to species. This strip road, if the cutter is on a piece rate basis, must be made by the cutter at no additional compensation.

Cutting in tree lengths is a relatively new method. Some experimental cutting in this manner was tried in Michigan and Wisconsin, but from the latest reports operations have reverted to the old method of cutting in shorter lengths.

In Minnesota tree-length cutting has become quite popular and indications are that in the future an increasingly larger percentage of the total pulpwood production will be cut in this manner. Tree-length cutting makes the cutter's task much less arduous in that no lifting is necessary as the piling is eliminated.

In actual practice a cutter is assigned a strip as in the former method. He begins his falling operation at either end of the strip. All trees are fallen in a herringbone pattern, so that either the tops or butts of the trees are easily reached with a winch cable from the strip road. The cutter's duty is to fall the tree in the desired direction, limb and top the trunk. Payment to the cutter is on the basis of an established piece rate per tree length for various sizes or by a straight hourly rate.

Skidding

Skidding is done in both summer and winter, but winter is the most favorable season. Short length pulpwood is skidded to the loading point or the stock pile landing on a wooden two-runner sled called a dray. A dray to be pulled by a team of horses is made for a three-quarter to one cord capacity. Drays used for tractor-skidding are generally a little wider to accommodate pulpwood up to one and one-half cords. The procedure is simple. An empty dray is pulled down a strip road to a pile of pulpwood piled previously parallel to the strip road by the cutter. The pulpwood is hand loaded lengthwise by two men on the dray. The dray load of pulpwood is then transported either by horses or by tractor to the landing point or to the stock pile landing.

The alternate method used is tree length skidding. This is done either by means of horses or tractor. A single horse or a team is used depending on the size of the timber and the ruggedness of the terrain. For the hitch for a team a one-half inch logging chain and a hook is used. Horse skidding is generally believed to be the most economical for shorter skidding distances.

For longer skidding distances — 600 feet or more — tractor skidding is more advantageous since more power is available and bigger loads can be handled. Tractor skidding can either be ground skidding or sulky skidding. Generally ground skidding with a tractor is done where short skidding distances are encountered. On longer distances a sulky is used. A sulky is a two-wheeled vehicle supporting an arch. At the top of the arch a sheave is so located that a cable from the winch drum of the tractor passes over and through the sheave. The sulky is attached to the tractor drawbar by means of a tongue extension from the arch. The sulky suspends one end of the tree length off the ground, preventing it from digging in when yarding. The use of a sulky insures clean, rock-free logs, reduces wear and tear on logging roads and steps up production.

Generally a hook is used at the end of the winch cable, commonly referred to as the mainline cable, so that a number of cable chokers can be attached making it possible to fasten onto a number of tree lengths at one time. Approximately a cord of pulp-

Figure 1. Tractor and sulky with load.

wood in tree length is considered a capacity load.

In actual practice the skidding crew for a skidding unit consists of the tractor operator and a choker setter. The choker setter's duty is to attach the choker cables to the tree lengths to make up a sulky load. He then pulls the main line cable of the tractor winch in position to enable him to attach the choker cables to the hook on the main line. The tractor operator winches in the tree lengths. Should this not be sufficient for a load the same procedure is gone through until enough tree lengths are dragged adjacent to the strip road to warrant a trip to the landing. The ends of the tree lengths are then lifted clear of the ground by means of the sulky and the winch cable. The load is skidded into a yarding point for subsequent handling (Fig. 1).

A tractor of from 25-35 drawbar horsepower is generally used for sulky skidding. A sulky capable of carrying the equivalent of a cord of wood in tree lengths is used with the tractor. Naturally the production of a skidding unit depends on the conditions of the forest stand, the distance to be skidded and the terrain. On most operations in the Lake States a skidding unit of this type would skid from 15-20 cords per working day. The tractor operator and the choker setter are paid by the hour.

Bucking

In logging by the conventional system the bucking of the tree into shorter lengths is, of course, done by the cutter immediately after falling the tree. This bucking is done under adverse conditions and in addition requires quite an expenditure of physical energy in that each stick must be carried a considerable distance to be piled adjacent to the strip road.

The elimination of much of the "bull work" is an important factor in the recent trend toward more tree-length logging. Tree lengths at landings are bucked up into shorter lengths in various manners. The common method used today is bucking on the ground with portable chain saws. As the tree length is skidded to the landing it is marked off into the desired shorter lengths and bucked by two men with a two-man power saw. On completing the bucking of a number of tree lengths, the same crew with the addition of a third man stock pile the shorter lengths in readiness for future loading. The above method is employed usually on the smaller operations on which a small area of timber is to be cut and a small crew employed.

On larger operations specially constructed slashers are used. The two common types are the circular saw slasher and the chain saw slasher. The circular saw slashers vary from the crude homemade machine to a well designed factory-made machine. Most circular saw slashers also incorporate a conveyor truck loading attachment.

The power unit commonly used on a factory-made machine is a V-8 Ford 40 hp. motor. This motor drives a tree conveyor that places the tree length under the saw. It is actuated by the sawyer advancing a hand lever to bring the tree length up to the cut-off stop for each cut. A cable crosshaul, powered by the same motor, is controlled by a separate operator. The cross haul pulls tree lengths from the point of deposit by the skidder onto the tree conveyor. A 44-inch circular saw, its swing controlled hydraulically by the sawyer, does the cutting. A loading conveyor removes the pulpwood sticks as they are cut and transports the same to a truck placed in position. The extension apron of this conveyor is raised and lowered hydraulically to facilitate loading (Fig. 2).

In operation a five-man crew is needed for the slasher. Two men man the two cables on the cross-haul. Their duty consists of attaching the hooks at the ends of the cables to a tree length and detaching the same on the tree length being pulled onto the tree-conveyor. A third man operates the controls of the cross-haul winches. A sawyer operates the tree conveyor and the swinging saw. The fifth man assists the truck driver in properly placing the pulpwood sticks on the truck as the sticks fall from the loading conveyor. An average daily production of 60-70 cords can be cut and loaded on trucks with this type of a slasher-loader.

Only one chain saw slasher is in existence to the best of the writer's knowledge (Fig. 3). This machine has an overall length of 49 feet. It is about six feet high and six feet wide. It is powered by a diesel unit of 64 belt horsepower mounted on the framework. The operating control levers for the machine are located at one end of the machine for one man control. The main features of the machine consist of chain saws, hydraulically operated lifting arms and a conveyor system.

The cutting components of the machine are seven individual standard Disston chain saws, 133 inches long, which are spaced on eight foot centers, enabling the machine to produce six pulpwood sticks from one log. Each saw has forced feed lubrication, powered from the main power unit shaft.

The lifting arms, fabricated of ½ inch steel plate welded to 3½ inch

Figure 2. Circular-saw slasher-loader.

extra heavy pipe, are hydraulically operated. By means of a lever, the machine operator controls the movement of the lifting arms to engage each log. Upon being cut, the eight foot pulpwood is conveyed to the end of the machine where it is sorted, bunched and loaded by crane onto the waiting trucks.

This machine is very efficient in its cutting operation. The fact that varied species can be cut and sorted due to the ability of the take-away conveyor to travel in either direction greatly simplifies the logging of a mixed stand. However, since a crew of twelve men are required to operate the same, its use is limited to a large volume operation. Attempts have been made to diminish the size of the operating crew by further mechanization; but as yet, the solution has not been found.

Briefly, the operation of the chain-saw slasher is as follows: Skidding tractors equipped with sulkies deposit tree-lengths onto a skidway. Two men detach the chokers. Each tree-length is then rolled a short distance onto a set of horizontal rollers. Three men at this point line up one end of the tree length with an end saw to eliminate the necessity of a short butt cut. The tree-length is then rolled another foot so that the lowered lifting arms will cradle the tree-length on being raised. The tree-length then is forced into the speeding chain saws. The cut sticks fall into a V-shaped conveyor trough and thence are conveyed in one direction or the other. On the end of the machine to which the predominant species of the timber stand go, two men receive the sticks on an apron from the discharging conveyor. The sticks are shunted to one side or the other to be bunched by two additional men. The same procedure is gone through on the other end of the machine receiving the minor species except that here all functions are performed by two men. A crane on crawler tracks then shunts back and forth to either end of the machine to load the bunched wood with a bucket directly onto a waiting truck. The operator of the machine sits in a partially enclosed cab at one end of the machine in a position to allow him to see most of the crew members and the operating machine. Given sufficient tree lengths a slasher of this type can cut 120 cords of pulpwood per eight hours. In stand of timber considered only fair this machine has maintained an average production of 90 cords per day.

Figure 3. Multiple-chain-saw slasher.

Loading

Loading of pulpwood in the Lake States is done by a number of means ranging from manual loading of trucks and railroad cars to the use of expensive cranes. Hand loading is still done by the smaller operators. The hand loading of railroad cars from trucks is aided somewhat by the use of loading platforms at railroad sidings.

A simple mechanical device which is quite widely used for the loading of trucks in the woods is the forest jammer. This jammer provides an effective means of transferring pulpwood from sleighs or drays to trucks and trailers. The jammer is basically composed of an upright wooden mast, a wooden swinging boom that rotates about the mast, a power unit that drives a winch drum, lifting cable, and sheaves at the base of the mast, at the base of the boom and at the extreme end of the boom. Stabilizing lines are attached to stumps for anchorage, passed through sheaves near the top of the mast, and terminate on small hand-operated winches permanently attached to the jammer base. The vertical axis of the mast is deflected from a true perpendicular by adjusting the stabilizing lines. A slight angle from the perpendicular causes the boom to swing, by gravity action, in the direction of the tilt of the mast. Return is accomplished manually. In operation, the position of the mast is adjusted to use the gravity swing when a load is suspended from the hoist line. By spotting the truck under the low point in the boom arc, loads may be lifted and swung to that point. During the loading operation, the truck is moved forward or backward to spot the sling loads at the desired location on the pulpwood rack of the truck. A jammer of this type is capable of lifting loads of one cord. Its capacity in cords per day depends on the type of wood being handled and the skill of the operators. Generally an eight cord truck load can be formed in 20 minutes. A crew of four is required — the operator, two sling handlers and a top loader.

Among the commonly used factory built devices for the loading of pulpwood both in hot-logging operations and on loading trucks from stock piles are: the truck-mounted hydraulic crane, and the wheel and the crawler type commercial cranes. The above types of loading equipment are all very mobile and thus lend themselves well to most loading situations. They can be used either with loading slings or pulpwood buckets depending on the conditions of the loading operation. All have the advantage of requiring a relatively small loading crew.

In upper Michigan a common type of equipment for loading railroad cars, either flat or gondola, is the home-made gantry crane. This is a stationary unit composed of a power unit (usually housed), an overhead frame work that traverses a truck road and the railroad tracks, a traveling carriage upon the overhead frame work and sheaves and cables connecting the hoist block with winch drums in the power unit house. A car pulling drum is also powered by the one power unit. Special trip slings are used to transfer the pulpwood load from the truck to the railroad car. As much as three cords have been handled at one lift with this type of loading device. If much wood is to be loaded, a good size railroad siding is necessary to store empty as well as loaded cars. A two-man crew can handle the loading operation, although if the wood is coming fast, a four-man crew would be the most efficient.

Hauling

In the Lake States, the hauling of pulpwood is done either by rail or by automotive truck. Rail hauls are confined generally to the longer hauls. Truck haul for distances up to 100 miles is the general practice.

In Minnesota trucks with semi-trailers are used quite extensively. Within the past few years the trend in trucking leaned toward heavier road equipment; however, the campaign of the State Highway Department on adherence to the axle weight limits during the win-

ter season as well as during the summer have made trucking with heavier and safer equipment prohibitive.

Bob-tail trucks are used more in Michigan and Wisconsin; but with the increase in truck hauling distances trucks equipped with semi-trailers are becoming more popular.

Under the present highway restrictions in the Lake States a light weight truck with a light trailer dolly and pulpwood rack is the most practical for the hauling of pulpwood. A seven-cord load can generally be legally transported depending, of course, on the per-cord-weight of the pulpwood.

In closing it should be mentioned that in recent years the handling of pulpwood has been vastly improved by progress in mechanization. Due to the nature of the product and the conditions under which its hauling must be done, progress is not as rapid as in other branches of the paper industry.

Manufacturing Progress By Warren Pump Co.

The Warren Steam Pump Co., Warren, Mass., research, product engineering and improvement in plant facilities have continued unabated over the years, always with the objective of making worthwhile contributions toward better quality and greater production at less cost. Some of the new or more recent developments are briefly described below:

WARREN TYPE L, LS and A. These three basic types are available and the services for which they are adapted include pumping hot or cold acids, alkalis, chlorine, digester liquors and paper stock.

Type L—six sizes, each with renewable liners and designed for stainless steel, nickel iron or other alloys to meet special requirements. Open impeller.

Type LS—two sizes, each designed for stainless steel, nickel iron or other alloys to meet special requirements. Closed impeller.

Type A—five sizes, lined with rubber or similar coatings. Impeller may be similarly coated or of special alloys, uncoated.

All Types L, LS and A embody these four features: (1) Outside adjustment to reduce inevitable wear between impeller and suction liner. (2) Spacer type coupling on "L" and "LS" permits easy removal of rotor without disturbing motor. Also allows adjustment for wear. By simply removing bearing cap, head cover bolts and cover of spacer type coupling, entire rotor can be lifted free without disturbing piping or motor. This means much less time lost when necessary to replace rotor parts or liners. (3) Stuffing Box is extra deep on Types "L" and "LS" and arranged for water cooling if desired. Seal ring provides for sealing from external source. Split type glands. (4) Various types of impellers are available for a variety of services. Eductor vanes keep space back of impeller pumped free of fibre or grit, reduce pressure on stuffing box and insure long life of packing.

Warren specializes in job-engineered propeller type circulating pumps for chest agitation of pulped stocks, including filler stock in Board Mills. Available in two types and three sizes and for use on horizontal or vertical chests.

For general and lighter types of service these new Warren units fit into many pumping situations in the average mill and at comparatively low cost. Unlike the regular compacunits (close coupled) these items may be V-Belt, Turbine or Motor Drive. Sizes, 1", 1½", 2", and 3". Capacities, 5 to 450 GPM. Heads 15′ to 500′. Materials: standard, all iron, all bronze or special metals to meet unusual requirements. Early deliveries on most sizes and standard materials.

Recently developed Types TM and TH, four- and six-stage pumps handle pressures up to 1,200 psi and embody the most modern in multi-stage design. They are adapted to any type of driver and are available in bronze fitted, stainless fitted and all stainless.

An important contributing factor to the dependability of Warren pumps is adherence to high standards established and maintained for the metals used in their construction. Carefully prepared material specifications, based upon constant research and job-proved experience, rigidly control the chemical composition, physical properties, process of manufacture, tolerances, workmanship and finish of every component part of Warren Pumps, are features.

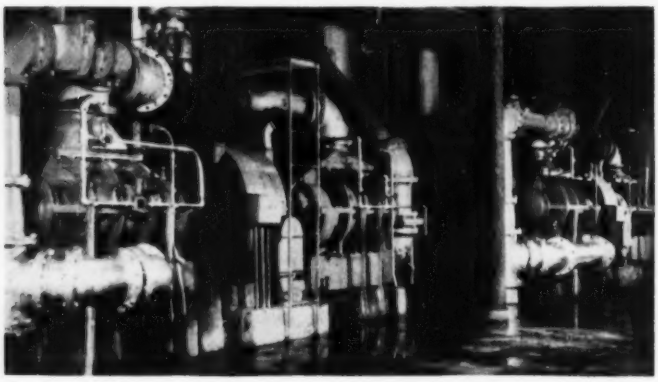
As a specialized service to pulp and paper mills, Warren maintains a paper mill consulting engineer of wide, successful experience. Practically his entire time is spent in the field and his services are available upon request.

A new brochure, largely pictorial and devoted exclusively to Pulp and Paper Mill installations by Warren, has just been released. A copy may be obtained by addressing Warren Steam Pump Co., Warren, Mass.

Roots-Connersville Two-Stage Vacuum Pump

Roots-Connersville Blower Corp., Connersville, Ind., has developed a two-stage vacuum pump to supplement its present line of single-stage paper mill type pumps. These pumps have the capacity to handle large volumes of air and entrained water required in the higher vacuum range.

The two-stage pump consists of two single stage vacuum pumps operating in series. The discharge of the first stage is piped to the inlet of the second stage. These pumps are designed to operate at standard motor speeds and are arranged for direct connecting one on each side to a double shaft extended motor. This makes a very compact unit and reduces piping requirements to a bare minimum.



Battery of Roots-Connersville two-stage Vacuum Pumps

The accompanying picture illustrates a typical installation made on a 234" fourdrinier machine operating at 1,200 feet per minute. These particular pumps were installed in a large Canadian paper mill producing 32-pound newsprint paper. The foreground unit serves a 36-inch diameter, single suction box couch roll. It is rated 5,800 CFM inlet air at 22 inches mercury vacuum while operating at 600 RPM and requiring 250 brake horsepower. The unit in the background serves the first and second press rolls and is rated 8,200 CFM inlet air at 20 inches mercury vacuum while operating at 600 RPM and requiring 335 brake horsepower. These pumps were tested in the field and very good efficiencies were obtained.

Camas Bleach Plant

By

J. V. SAVAGE

Camas Div., Crown Zellerbach Corp., Camas, Wash.

There is enough material for papers on each of several phases of our bleach plant, i.e. Engineering, mechanical and electrical, technical control, research, and operation.

In view of the fact that I am not necessarily the last word in any of these fields I want to touch a little bit on all of them.

Our bleach plant had its beginning several years ago when the entire industry started to take a frantic inventory of the pulp wood situation for "tomorrow."

A careful cruise of Crown Zellerbach holdings by our timber department established that a substantial percentage of our timber was Douglas fir.

Someone in the organization coined the maxim "Trees Forever" which the timber department was willing to underwrite if we would take Douglas fir along with the other species in our pulp mills.

Any of you who have had experience with it know that it has different characteristics than the more commonly used species for pulping, the most desirable one being an unusually high tear strength. Douglas fir heart wood contains a coloring matter that makes bleaching to high whites a rather tough assignment.

We wanted to bleach pulp from this wood and maintain the strength advantage. We also wanted enough flexibility built into the plant to take care of several different contemplated color specifications as well as several different wood species.

The research and engineering departments took the ball from there and came up with the Camas bleach plant. We think it is measuring up to expectations in a very satisfactory manner.

The engineering involved in the plant is beyond the scope of this paper, however, I would like to touch on it from an operations point of view.

The building is of unusual construction in that the roof is arched to support its own weight, eliminating the usual columns or cross beams. This gives the operating floor an open appearance that has impressed most of those who have visited the plant.

The control panels and washers are located on the main floor. All piping and other equipment are on lower levels.

A double rail track system just outside the building permits four chlorine tank cars, one caustic car and one lime car to be in use, or connected up for use at the same time.

The sulphite bleach plant and the bleach liquor maker use from this same siding, which accounts for so many cars.

The lime for bleach liquor making is unloaded into a 200 ton capacity concrete silo by an airveyor system.

The lime is fed from the silo into a Door slaker and classifier by a variable speed screw conveyor. Four large storage tanks are provided for hypochlorite. It is pumped from here to a constant head tank on the bleach plant roof for supply ahead of the Rotometers.

The caustic soda is unloaded from the tank cars into storage tanks at regular 50% strength.

A supply tank is kept full of 3.5% caustic soda by means of a Foxboro level controller linked to a Treet-O-Control meter which is in turn linked to a "Proportioners Inc. ¾" Treet-O-Unit. A pump from the 3.5% storage tank supplies a constant head tank on the roof along with the bleach liquor tank.

The Chlorine is piped from all four cars to a manifold inside the building where the operators can tap from any of the cars by opening a valve numbered to correspond with spot stations on the track.

Compressed air for Cl_2 unloading is supplied by compressors used for that purpose only. The air is passed through a condenser, filter, Lectrodryer and a calcium chloride drying unit before it is used in the Cl_2 system.

Pulp for bleaching is made in a new addition added to the original Kraft mill. The pulp is run through knotters and washers and into two high density storage tanks. It is pumped from here to the flat screens, over deckers and into either of two 20 ton chests which are the entire screened stock supply ahead of the bleach plant.

Kraft bleaching consists of two phases.

1. Removal of the remaining lignin left from the digestion process.
2. Bleaching out of the brown color associated with kraft cooked pulps.

Calcium hypochlorite is the most expensive of the bleaching chemicals, it is the least selective and is the most harmful to strength. Based on this fact, our plant is designed to produce a pulp pretty well free of lignin before the hypochlorite stages are reached.

The lignin is rendered partially soluble by chlorine gas. The solubility is completed by caustic extraction. Two stages of each are employed with an agitated water soak after the first and most severe caustic extraction stage. The pulp strength at this point is somewhat greater than the original unbleached pulp.

Figure 1. Main floor of Bleach Plant showing the vacuum washers. Note arched roof and absence of columns.

The amount of hypochlorite bleach liquor necessary to complete the bleaching is very small (about 1.5% of the A.D. pulp) and no strength is lost in bleaching to 80 G.E. color.

The stock is pumped from the brown stock storage to a consistency controller and stock meter. The recording meter measures the stock flow or production rate for the plant. A mixer at the bottom of the chlorination tower receives the stock from the meter and mixes the chlorine gas with it before discharging into the tower. The chlorine is measured by rotameter. The pulp consistency is 3.3% A.D. and the retention time in the tower is one hour at 150 tons per day production rate.

The chlorinated stock is washed, thickened and discharged into the first caustic mixer directly over the caustic cell. The pulp is pressed by squeeze

Presented at the 1949 Joint Spring Convention of the Pacific Coast Branch Technical Section, Canadian Pulp and Paper Association and Pacific Coast Division, The American Pulp and Paper Mill Superintendents Association, Inc.

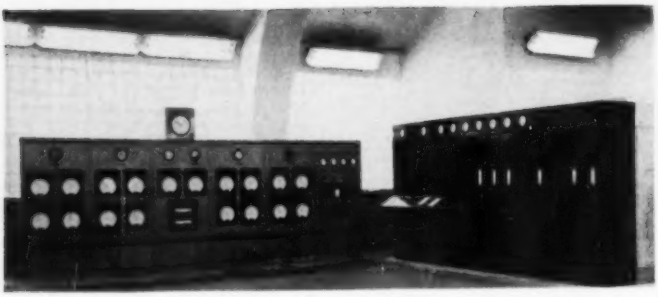


Figure 2. Control panels for Bleaching System.

rolls to about 17% consistency then diluted with hot water and caustic soda to 11% and 160°F. The retention time in the high density stage is maintained by a variable speed screw discharge from the bottom of the tower into the dilution chest. This stage is followed by an agitated soak at 3.3% A.D.

The stock is then washed and discharged into a second chlorine mixer and tower identical to the first stage. The amount of chlorine that can be used to advantage in this stage is determined by the severity of the previous stages and the concentration of alkalinity in the pulp. The second chlorination is followed by another caustic extraction using ½ as much caustic and 140°F.

The pulp has been going through a process of purification rather than bleaching up to this point. The actual whitening process can now be accomplished with a minimum of hypochlorite bleaching liquor.

The first hypochlorite stage is a high density cell similar to the caustic cells with screw discharge at the bottom. Consistencies of 10 percent are maintained and a temperature of minus 90°F. The pH is maintained in a safe range by addition of caustic soda.

A second hypochlorite stage follows using two low density (6%) towers in series. The temperature and pH are controlled in the same range here.

This is followed by an SO_2 flash tower where the stock is agitated at a pH of 5.5 for 1 hour.

After washing, the stock can go directly to low density storage for the paper mill or by shutting off dilution water it can be conveyed by belt to high density storage.

As mentioned earlier, flexibility was essential in the operation for coping with the various colors and wood species that we are called on to process.

A system of 3 way valves and pipes along with the necessary chemical treating equipment makes it possible to alter the bleaching sequence several different ways.

For instance, 100% Douglas fir can be bleached better by using the first caustic cell as a high density hypochlorite stage. This is necessary only for color in the range of 85 GE or better.

We can also skip any of the stages, using only that number necessary for the particular grade in process.

During periods when semi-bleach, of less than 70 GE brightness is being made, more than half of the plant is bypassed.

In the very near future we expect to use this equipment for special sulphite bleaching, during the periods when it is available.

The operation is a continuous one so it is apparent that any change in either consistency or bleachability must either be corrected at once or compensating chemical treatment started.

The consistency controller has done a good job, so our only critical variables are changes in bleachability or as often happens, changes in the percentage mixture of wood species.

We have found the operation to be much more easily controlled by making most of our compensating chemical changes entering the hypochlorite stages rather than to do it farther back in the system.

The tests we make for control purposes are consistency, color, Wiles bleachability and pH. Everything else is recorded by instrument.

The plant uses approximately 70,000 gallons of water per ton of pulp and the steam usage is in the range of 4,000 pounds per ton. The actual chlorine usage varies so widely with different pulps that the consumption is shown in *Table I* as percentage of the total used

Table I

First chlorination	75%
Second chlorination	10
First caustic	3*
Second caustic	1*
First hypochlorite	10
Second hypochlorite	5
Sulphur dioxide	—
Caustic used for buffer	1*

* Actual percentage consumption based on air dry pulp.

in various stages.

The SO_2 stage has been found unnecessary for pulp to be used in slush form by our own paper machines. It is used only on pulp to be dried and baled for export.

Of course, the principal purpose of SO_2 is to prevent color reversion on the dryers or in storage. This appears to be more true of pulp than of paper.

The electric power usage is 196 K.W. per ton when all stages are used. The electrical layout includes a system of interlocks which are important in a continuous system.

A kick out of any important motor will automatically kick out the equipment ahead of the failure, back to the first point where a build up of pulp can be handled.

All of the motors in the entire plant are operated from the top floor where ammeters indicate the load and signal lights indicate from a distance whether or not individual motors are operating.

Like everything else connected with the industry the final verdict is determined by the quality of the product coming off the dry end of the paper machine. To date we have made paper from the various bleach grades in weights from 40 lbs. to 200 lbs. for a wide variety of uses.

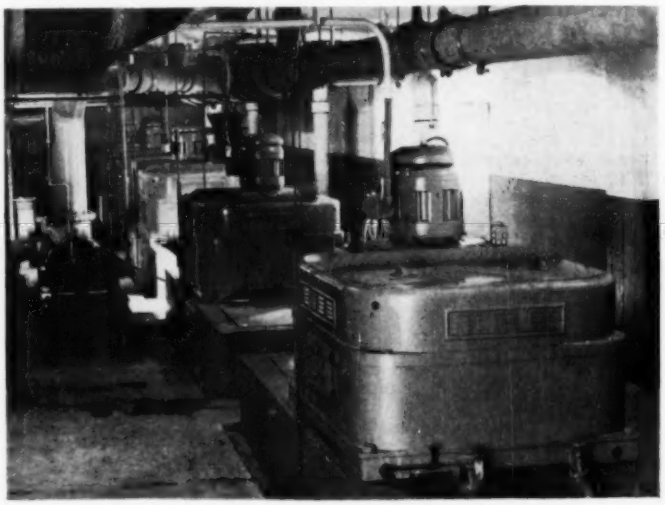


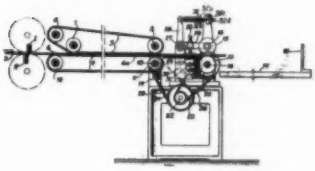
Figure 3. Lower floor of Bleach plant shown piping and agitator equipment.

Patent Abstracts

● ***In addition to abstracts on the technology of pulp, paper and related industries, miscellaneous abstracts which may provide useful information are included.***

2,467,423—Sheet Delivery Apparatus. Hobart W. Bruker, Bordentown, N. J., assignor to George W. Swift, Jr., Inc., Bordentown, N.J. Filed March 19, 1945—Issued April 19, 1949.

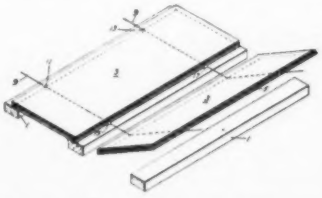
Sheet delivery apparatus of the character described including means for successively and positively advancing a series of relatively stiff and unbetdable blanks, and a slow-down mechanism



located beyond the delivery end of said blank advancing means, said mechanism including transverse rollers disposed on opposite sides of the path of travel of blanks advanced by said advancing means, means at all times spacing said rollers a distance great enough to prevent the blanks from being positively gripped between said rollers while in engagement with said blank advancing means, said rollers being rotatable at surface speed less than the speed of feed of said advancing means, said apparatus being constructed and arranged to cause the blanks projected between said rollers by the blank advancing means to tilt into more positive engagement with the adjacent surfaces of said rollers after passing beyond said advancing means, to slow down the velocity of travel of the blanks ejected from between said rollers.

2,467,581 — Wall Assembly. Robert Connell, Portland, Oreg., assignor to California Container Corporation, Emeryville, Calif. Filed July 3, 1944—Issued April 19, 1949.

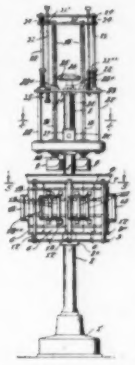
A wall assembly comprising a framework, a plurality of wallboard sections on said framework,



each of said wallboard sections having wire threaded therethrough and affixed to said framework intermediate said sections.

2,467,631—Machine for Making Concrete Pipe. Laurie F. Parker, Minden, La. Filed February 14, 1947 — Issued April 19, 1949.

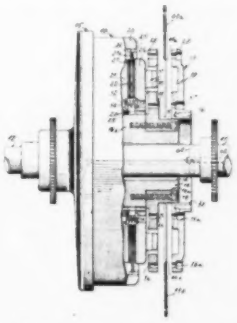
In a machine for making concrete pipe, consisting of a standard, a table support rotatable on the standard, a gear box above the said table support, a plurality of shafts extending through the gear box, forming heads on said shafts, gear-



ing in said box adapted for rotating said shafts, guide rods arranged in parallelism with the shafts above the mold supporting table, a crosshead carried by the shafts and received on said guide rods, and cushioning means carried by said guide rods above and below said crosshead.

2,467,830 — Fluid Pressure Operated Device for Use With Clutches. Lloyd Hornbostel, Beloit, Wis., assignor to Beloit Iron Works, Beloit, Wis. Filed April 26, 1945—Issued April 19, 1949.

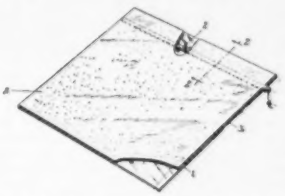
In a fluid operated friction clutch, a shaft, a diaphragm carrying member mounted on said shaft including a pair of annular plates having mating coextensive with their peripheral portions,



one of said plates having arcuate openings therethrough lying on opposite sides of said shaft with a bridging portion therebetween, the other of said plates having spaced arcuate recesses with a mating bridging portion therebetween, said recesses being in alignment and coextensive with said arcuate openings, a flexible split annular diaphragm clamped between said mating surfaces with its parting line extending between said mated bridging portions, said diaphragm being disposed across said recesses to form pressure chambers, means for clamping said plates together with said parting line clamped between said mating bridging portions, said flexible diaphragm being capable of sufficient distortion adjacent the split portion to allow the removal of the diaphragm edgewise when said clamping means are removed and said plates are separated, and means for directing a fluid under pressure to said pressure chamber.

2,467,875 — Package and Packaging Material Therefor. David B. Andrews, Neenah, Wis., assignor to Marathon Corporation, Rothschild, Wis. Filed January 7, 1947—Issued April 19, 1949.

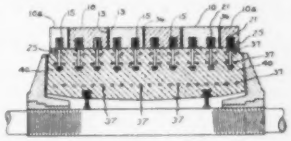
A cheese package comprising a mass of cheese of given dimensions tightly enveloped by a wrap-



per, said wrapper comprising a base sheet, a coating adhered to the surface of the base sheet adjacent to the cheese, and a tearing element embedded in the coating, said tearing element being formed at an edge of the base sheet to provide a grasping tab, said coating being of a thickness at least equal to the thickness of the tearing element whereby a uniform, unbroken surface of the wrapper is in continuous contact with the mass.

2,467,878 — Pulpstone. Hugo W. H. Beth, Worcester, Mass., assignor to Norton Company, Worcester, Mass. Filed August 1, 1946—Issued April 19, 1949.

In a pulpstone, a plurality of blocks of bonded abrasive material, said blocks being arranged in

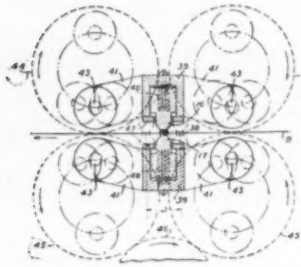


courses to form a hollow cylinder of revolution, a hollow concrete core inside of said cylinder of revolution, means attaching said blocks to said hollow concrete core, each of the blocks in the courses of said blocks at the ends of said pulpstone being appreciably shorter than each of the remaining blocks included between said courses measured in a direction parallel to the axis of the said pulpstone.

2,467,879 — Bagmaking Machine. Clyde K. Billeb, Shorewood, Wis., assignor to Milprint, Inc., Milwaukee, Wis. Filed May 17, 1945—Issued April 19, 1949.

In a bag making system, means for advancing a flattened tubular ribbon of material longitudinally along a rectilinear path, a pair of elongated parallel carrier cradles simultaneously revolvable at like speeds but in opposite directions entirely on opposite sides of said path, a sealing bar carried by an intermediate portion of each of said cradles and revolvable therewith on the same side of said path as its respective cradle, said bars having flat faces spanning and engageable with the opposite sides of successive transverse areas of the advancing ribbon and being suspended from their carrier cradles so as to constantly maintain said faces parallel to said path, two sets of oppositely rotatable gears disposed on opposite sides of said path, each gear

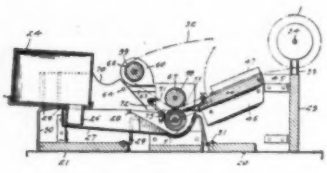
of each set having a crank coacting with an end of the cradle disposed on the corresponding side of said path for revolving said cradles, and



means for driving said gears to cause said bars to advance with a slow forward motion while said faces engage the ribbon and with a more rapid return motion while out of contact with the ribbon.

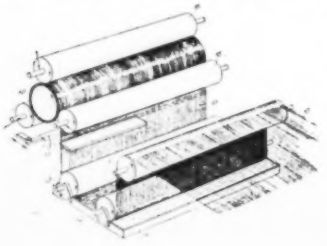
2,467,998 — Paste Applying Machine. Paul J. Stefanelli, Washington, D. C. Filed January 23, 1946 — Issued April 19, 1949.

In a device for applying paste to a roll of paper, a hinged paper roll support, adjustable means carried by said support for positioning the paper roll, an adjustable guide for the paper for-



wardly of said paper roll support, a paste channel, a roller partially immersed in paste in said channel and adapted to apply paste to the paper, a pressure roller for pressing the paper against said first roller, resilient annular ribs on said spaced from said pressure roller, resilient annular ribs on said guide roller, tensioned means for urging said pressure roller toward said first roller, adjustable spring pressed wipers engaging the ends of said first roller for removing excess paste from the latter, a spring pressed notched wiper engageable with a stretch of paper disposed between said pressure and guide rollers for smoothing the paste, on the paper, a removable paste reservoir, means supporting said reservoir, and a channel connecting said reservoir with said paste channel.

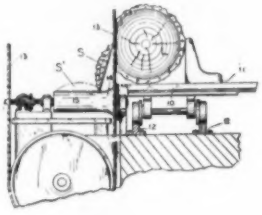
2,467,999—Composite Pipe. Joseph F. Stephens, Kansas City, Mo., assignor to Gustin-Bacon Manufacturing Company, a corporation of Missouri. Filed June 23, 1944—Issued April 19, 1949.



Fiber reinforced composite pipe consisting of long reinforcing fibers layed up circumferentially in superposed layers to form the peripheral shell of the pipe, said fibers bonded with a cured plastic.

2,468,036 — Mechanical Off-Bearing Flared Rolls. George W. Charters, Camas, Wash., assignor to Crown Zellerbach Corporation, San Francisco, Calif. Filed October 2, 1945 — Issued April 26, 1949.

In combination with a log moving carriage and a vertically-operating saw for cutting slabs, a plurality of slab-positioning rolls, said slab-posi-



tioning rolls arranged with their axes perpendicular to the line of travel of said carriage, the axes of said rolls being all in the same horizontal plane, said rolls being identical in size and shape, each of said rolls having a conically-shaped end portion, said end portions located adjacent said carriage and extending approximately ¼ inch inwardly from the saw line, whereby a slab, upon being severed from the side of the log by said saw, will drop onto said rolls and its bottom edge will slide down said end portions and thence outwardly on said rolls, causing the slab to become positioned on said rolls with its sawed face down, the highest portion of said conically-shaped ends of said rolls being at approximately the same height as the top of said carriage.

2,468,054—Copolymers of Vinylidene Fluoride with Ethylene and Halogenated Ethylenes. Thomas A. Ford, Wilmington, Del., assignor to E. I. du Pont de Nemours & Company, Wilmington, Del. Filed February 28, 1944 —Issued April 26, 1949.

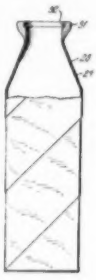
A process for obtaining polymeric products which comprises reacting a mixture consisting by weight of from 5% to 95% vinylidene fluoride and from 95% to 5% of a compound selected from the group consisting of ethylene and halogen substituted ethylenes, at a pressure in excess of 10 atmospheres and in the presence of a polymerization catalyst comprising a peroxy compound.

2,468,480—Coating Composition Containing Polyethylacrylate and a Chlorinated Hydrocarbon Polymer. Charles Edward Bradley, Jr., Westport, Conn., assignor to R. T. Vanderbilt Company, Inc., New York, N. Y. Filed June 7, 1946—Issued April 26, 1949.

A coating composition comprising a volatile aromatic solvent and a plastic base dissolved therein, the plastic base consisting of polyethylacrylate and a chlorinated hydrocarbon of the class consisting of chlorinated rubber and polymeric chlorinated isoprene, the proportion of the chlorinated hydrocarbon ranging from one-fourth to three-fourths of the polyethylacrylate, the polyethylacrylate being present in sufficient amount that it constitutes the sole plasticizer for the chlorinated hydrocarbon in films deposited from the composition.

2,468,306 — One-Piece Paper Container. Jesse Norden, Woodmere, N.Y. Filed December 18, 1946—Issued April 26, 1949.

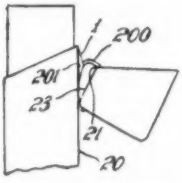
An open ended container formed from a blank of paper or the like having pleats forming a



multi-ply bottom from the central portion of the blank and multi-ply side walls formed from portions extending radially of the central portion, the free edges of the blank terminating substantially in a common plane at the open end of the container, and the plies of the bottom and side walls being sealed together.

2,468,543—Box. John Walker Chalmers, Deptford, London, England, assignor to Molins Machine Company, Limited, London, England. Filed December 19, 1945—Issued April 26, 1949.

A box of oblong rectilinear shape in cross-section made of cardboard or other like resilient material with the front and back walls of the box substantially parallel and forming the longer



sides of the oblong, said box comprising a relatively deep body portion with the opening at the top thereof, the top of the body portion being arranged at different heights to facilitate access to the contents of the box, a boxlike lid whose back wall is hingedly connected to the back wall of the body portion at a position between the top and bottom of the box and corner portions at the top of the body portion, which corner portions extend for a substantial distance above the hinge axis of the lid and engage the front corners of the lid when closed to resist opening of the lid, said corner portions, together with the contents of the box, being arranged within the surfaces swept out by the leading edges of the side walls of the lid during closing of the latter, the front wall of the lid being so dimensioned that during closing of the lid the free edge of such front wall passes clear of the tops of said corner portions and of the front wall of the body portion, while the front corners of the lid when the latter is closed, extend downwardly below the hinge axis of the lid, the back wall of the body portion being provided with slits which commence at opposite ends of the hinge axis, respectively, and extend toward the bottom of the box, that portion of the back of the box which lies between the two slits and between the lower ends thereof being resilient with respect to the remainder of the back wall of the body portion.

PRICES

The prices below reflect general market quotations applying to those standard grades in which the normal volume of business is being done.

NEW YORK

Delivered New York

Standard News, per ton—

Rolls, contract	$100.00/	—
Sheets	115.00/	—

F.o.b. Mills, Carload freight allowed, dock N. Y.

Kraft— per cwt., 40# base wgt.

Standard Wrapping Rolls	$6.50/	—
No. 1 Wrapping Rolls	7.25/	—
Standard Bag	6.00/	—

Tissues— per ream 24x36 (480) 10 lbs. 2500 lbs. or more

Wh. No. 1 Frd.	$155.00/	—
Wh. No. 1 M. G.	150.00/	—
Wh. No. 1½	140.00/	—
Wh. No. 2	120.00/	—
Kraft Anti-Tar	1.37½/	—
Shrd. Wh. No. 1 per lb.	.11½/	—

Toilet— per case of 100 rolls—1 M sheets.

Unbleached 4½x4½	$5.75/	—
Bleached 4½x4½	6.95/	—
Bleached 4½x5	8.80/	—
Per Case of 50 rolls—2000 sheets		
Unbleached 4½x4½	$5.75/	—
Bleached 4½x4½	6.80/	—
Per Case of 100 rolls—1000 sheets		
Facial, 4½ x 8, 2 ply	$8.95/$9.45	

Paper Towels—per case of 3750—Zone 1.

Wh. Jr. M'tif'd 9¼x9½	$5.25
Br. Sr. M'tif'd 10x12	3.60
Br. Jr. M'tif'd 9½x9¼	3.10
Br. Jr. Sgl. fold 10x10¼	3.15
Blchd. 7½ x 11, 24/25 rolls	$3.95/$6.25

Manila, per cwt.

No. 1 Jute Tag 40 lb., sheets*	$15.05/$17.50
Reg. Jute M.F. Manila, sheets*	13.50/ 15.50
Wrapping Manila	8.75/ 10.50
Printing Manila	10.00/ 11.00

* Less usual allowance for rolls.

Boards, per ton—

Filled News	$77.50/ —
Plain Chip	75.00/ —
Blchd. Mla. L-d. Chip*	92.50/ —
White Pat. coated*	110.00/
Kraft Liners 42 lb.	100.00/
Kraft Corr. .009	105.00/
Binders Boards	110.00/116.00

* Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

WORLD WOOD PULP MARKETS

Fourth Quarter Contract Prices, Per Short Air-Dry Ton

	Delivered, with varying freight allowances		On dock Atlantic Ports Full freight allowance		
	U. S.	Canadian	Swedish	Finnish	Norwegian
Groundwood	$65.00/ —	$65.00/ —			
Soda, Bleached	113.00/ —	113.00/ —		Competitive	
Sulphate, Bleached	118.00/126.00	126.00/ —	125.00/128.00		
Sulphate, Unbl'd North'n		82.50/105.00	82.50/ 85.00	with	
Sulphate, Unbl'd South'n	80.00/ 82.50				
Sulphite Blchd. (S'ftw'd)	118.00/ —	118.00/ —	118.00/ —	Domestic	Competitive
Sulphite, Blchd. (H'dw'd)	113.00/ —				
Sulphite, Unbleached	100.00/ —	100.00/ —	100.00/ —	Grades	
Sulphite, Unbl'd (Glassine)	105.00/ —	105.00/ —	104.00/105.00		

WASTE PAPER MARKET

Prices to Mills (Per Ton) F.o.b. Cars

	New York	Philadelphia	Boston	Chicago
	Oct. 1	Oct. 3	Oct. 10	Oct. 1
No. 1 Mixed Paper	$7.00/ $8.00	$7.00/ $9.00	$7.00/ —	$10.00/ —
Boxboard Cuts	7.00/ 8.00	6.00/ 7.00	— / 5.00	13.00/ —
Mill Wrappers	11.00/ 12.00	10.00/ 12.00	— / 9.00	12.00/ —
No. 1 News	9.00/ 10.00	9.00/ 10.00	9.00/ 10.50	16.00/ —
Over-issue News	14.00/ 15.00	12.00/ 14.00	8.00/ 10.50	19.00/ —
Corrugated Containers	15.00/ 17.00	17.00/ 18.00	14.50/ 15.50	20.00/ —
New Corrugated Cuts	18.00/ 20.00	20.00/ 23.00	16.00/ —	23.00/ —
Double Kraft Ld. Corr. Cuts	34.00/ 35.00	30.00/ 35.00	25.00/ —	35.00/ —
Used Kraft Bags	25.00/ 30.00	18.00/ 22.00	25.00/ 30.00	20.00/ —
No. 1 Brown Kraft Paper	25.00/ 30.00	25.00/ 30.00	25.00/ —	20.00/ —
Super Resorted Br. Kraft	25.00/ 30.00	35.00/ —	40.00/ —	35.00/ —
New Br. Kraft Env. Cuts	65.00/ 70.00	60.00/ 65.00	60.00/ 65.00	55.00/ —
New Br. Kraft Cuts	40.00/ 45.00	55.00/ —	45.00/ —	50.00/ —
No. 1 Gdwd. Shvs.	15.00/ 20.00	15.00/ 20.00	25.00/ —	26.00/ —
White Newsblanks	50.00/ 55.00	40.00/ 45.00	— / 50.00	35.00/ —
No. 1 Flyleaf Shvs.	25.00/ 30.00	20.00/ 25.00	35.00/ 45.00	35.00/ —
No. 1 Soft Wht. Shvs.	75.00/ 80.00	60.00/ 65.00	70.00/ 80.00	55.00/ —
Super Soft Wht. Shvs.	90.00/100.00	65.00/ 70.00	80.00/ 90.00	60.00/ —
Hd. Wht. Shvs.	85.00/ 95.00	80.00/ 85.00	80.00/ 90.00	80.00/ —
Hd. Wht. Env. Cuts.	100.00/105.00	90.00/ 95.00	90.00/105.00	90.00/ —
New Manila Env. Cuts.	65.00/ 75.00	60.00/ 65.00	60.00/ 70.00	55.00/ —
Col. Tab Cards	30.00/ 35.00	20.00/ 25.00	35.00/ —	40.00/ —
Manila Tab Cards	60.00/ 65.00	60.00/ 65.00	75.00/ 80.00	65.00/ —
No. 1 Mixed Ledger	30.00/ 35.00	27.50/ 32.50	37.50/ —	40.00/ —
White Ledger	45.00/ 55.00	37.50/ 40.00	50.00/ 60.00	50.00/ —
Mixed Books & Mags.	7.00/ 8.00	9.00/ 10.00	12.00/ —	7.00/ —
No. 1 Rep'd Hvy. Books & Mags.	20.00/ 25.00	15.00/ 20.00	22.00/ 23.00	20.00/ —

The following prices are representative of distributors' resale prices, all deliveries in Zone 1:

Rag Content Bonds and Ledgers—

White, 20 lb.

Bonds

	4 Ctns. per cwt.
100% Rag Ex. No. 1	$51.40/$53.90
100% Rag	44.55/ 46.15
75% Rag	33.90/ 35.40
50% Rag	28.10/ 29.55
25% Rag	24.85/ 26.80

Ledgers

	4 Ctns. per cwt.
100% Rag Ex. No. 1	$52.65/$54.55
100% Rag	45.65/ 46.40
75% Rag	35.15/ 36.10
50% Rag	29.40/ 30.05
25% Rag	26.15/ 26.80

Sulphite Bonds and Ledgers

White, 20 lb.

Bonds

	4 Ctns. per cwt.
No. 1	$17.50/ —
No. 2	16.65/ 16.75
No. 4	15.60/ 15.95

Ledgers

	4 Ctns. per cwt.
No. 1	$18.80/ —
No. 2	18.05/ —

White Book

	Conversion Coated	Case
		per cwt.
No. 1		$19.75/$20.90
No. 2		19.25/ 19.65
No. 3		17.75/ 18.90
	Machine Coated	
No. 1		16.40/ 16.65
No. 2		14.90/ 15.15
	Uncoated	
No. 1 Antique (Watermarked)		16.40/ 17.90
Offset		15.15/ 16.65
A Grade E. F.		15.40/ —
A Grade S. C.		15.90/ 16.15
B Grade E. F.		14.90/ 15.15
B Grade S. C.		15.40/ 15.65

Twines

All Prices Nominal, F.o.b. Mill

(Soft Fiber)	
Coarse Polished—India	.35½/ .36½
Fine Polished India	.41½/ .45
Unpolished—Paper Makers	.32¼/ .34½
Tube Rope	.33¼/ .35½
Wrapping	.36 / .38¾
Cotton	.58 / .60
Polished Cotton	.55 / —
(Hard Fiber)	
Mex. Sisal	.21 / .27
(American Hemp)	
Polished Hemp	.45 / .48
Unpolished	.35 / .37½

Rag Market

New Domestic Cotton Cuttings

(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.	
White Shirt	$10.00/	$10.50
Unbleached Muslin	10.00/	10.50
Light Silesias	7.00/	7.50
White Back Blue Overalls	6.25/	6.50
Blue Overalls	6.00/	6.25
Fancy Shirt	4.50/	5.00
Percales	5.50/	6.00
Light Prints	5.50/	6.00
No. 1 Washables	2.75/	3.00
Bleachable Khaki	5.00/	5.50
Unbleachable Khaki	4.50/	5.00
Cottonades	4.25/	4.75
Lt. Flannelettes	7.00/	7.50
Men's Corduroy	3.50/	4.00
Women's Corduroy	3.00/	3.50

Old Domestic Cotton Rags

(Prices to Dealers, F.o.b. Ship. Pt.)

	Per 100 lbs.	
No. 1 Whites, Repacked	$4.25/	$4.75
No. 1 Whites, Miscellaneous	3.50/	4.00
No. 2 Whites, Repacked	2.75/	3.00

No. 2 Whites, Miscellaneous	2.00/	2.25
Cotton Pants & Overalls	2.50/	2.75
Thirds and Blues, Repacked	2.00/	2.25
No. 1 Roofing Rags	1.35/	1.45
No. 2 Roofing Rags	1.25/	1.35
No. 3 Jute Bagging	1.15/	1.20
No. 4 Brussels & hrd. Bck'd crpts.	**.90/**	**1.00**
Roofing Bagging	**.80/**	**.95**

New Foreign Cotton Cuttings
(Prices to Dealer, F.o.b. Dock, N. Y.)

Per 100 lbs.

New Dark Cuttings
New Mixed Cuttings
Light Silesias — prices
Light Flannelettes — are
New White Cuttings — nominal
New Unbleached Cuttings
Fancy Shirt Cuttings
Light Prints
Bleachable Khaki, No. 1
Unbl. Khaki, No. 1

Old Foreign Rags
(Prices to Dealer, F.o.b. Dock, N. Y.)

Per 100 lbs.

No. 1 White Cottons
No. 2 White Cottons
No. 3 White Cottons — prices
No. 4 White Cottons
Extra Light Prints — are
Old Light Prints
Med. Light Prints — nominal
Dutch Blue Cottons
Checks and Blues
Linsey Garments
Dark Cottons, European
Dark Cottons, Egyptian
Old Shopperies
New Shopperies

Bagging
(Prices to Dealers, f.o.b. N. Y.)

	Per 100 lbs.
Foreign Gunny	$5.50/ $6.50
Domestic Gunny, No. 1	6.75/ 7.00
Heavy Wool Tares	6.50/ 7.00
No. 1 Scrap Bagging	4.75/ 5.00
Foreign Manila Rope	5.00/ 5.25
Domestic Manila Rope	5.00/ 5.25
Jute Strings	5.50/ 5.75
No. 1 Sisal Strings	4.50/ 4.75
Mixed Strings	1.15/ 1.30

PHILADELPHIA

New Domestic Cotton Cuttings
(Prices to Dealers, F.o.b. East'n Ship. Pt.)

	Per 100 lbs.
White Shirt	$10.00/$10.50
Fancy Shirts	4.50/ 5.00
Light Silesias	6.50/ 7.00
Unbleached Muslin	9.75/ 10.25
Light Prints	5.25/ 5.75
Washable No. 1	2.50/ 3.00
Blue Overall	5.75/ 6.25
Percales	5.50/ 6.00
Bleachable Khaki	4.50/ 5.00
Unbleachable Khaki	3.25/ 3.75
Men's Corduroy	3.75/ 4.25
Ladies' Corduroy	3.25/ 3.75
Cottonades	4.00/ 4.50

Old Domestic Cotton Rags
(Prices to Dealers, F.o.b. East'n Ship. Pt.)

	Per 100 lbs.
Mixed White	$2.75/ $3.50
Thirds and Blues Repacked	2.25/ 2.60
Cotton Pants & Overalls	2.25/ 2.50
No. 1 Roofing Stock	1.20/ 1.30
No. 2 Roofing Stock	1.10/ 1.15
Roofing Bagging	.90/ 1.00

Bagging
(Prices to Dealers, F.o.b. East'n Ship. Pt.)

	Per 100 lbs.
Old Manila Rope	$5.00/ $5.25
Foreign Gunny No. 1	6.75/ 7.00
Domestic Gunny, No. 1	6.75/ 7.00
Sisal Strings No. 1	3.00/ 3.50
No. 1 Scrap	4.00/ 4.50
No. 1 Jute Rope	5.50/ 6.00

BOSTON

Bagging
(F.o.b. Boston)

	Per 100 lbs.
Foreign Gunny	$5.50 /$6.00
Domestic Gunny	5.50 / 6.00
Domestic No. 1 Old Rope	5.00 / 5.25
Foreign No. 1 Old Rope	5.00 / 5.25
Mixed Strings	**1.35 / —**
Transmission Rope—Domestic	**3.00 / 3.50**
Jute Carpet Threads	— / 2.00
Bleachery Burlap	**— / 9.00**
Scrap Burlap—	
Foreign	5.00 / 5.25
Domestic	5.25 / 5.75
South America	5.00 / 5.50
Austr. Wool Pouches	7.25 / 8.00
New Zealand Wool Pouches	— / 4.00
New Burlap Cuttings	7.00 / 7.50
Heavy Baling Bagging	**7.50 / 8.00**
Paper Mill Bagging	— / 3.50

Domestic Rags (new)
(F.o.b. Boston)

	Per 100 lbs.
New Light Prints	5.75 / 6.00
Fancy Percales	6.25 / 6.50
White No. 1 Shirt	10.00 /10.75
Light Flannelettes	**— / 7.00**
Canton Flannels, Bleached	**— / 9.00**
Underwear Cutters, Bleached	10.75 /11.25
Underwear Cutters, Unbleached	10.00 /10.25
Blue Overalls	6.00 / 6.50
Soft Unbleached	9.75 /10.50
Blue Cheviots	6.00 / 6.50
Fancy Shirt	4.00 / 4.50
Washable	3.00 / 3.25
Khaki Cuttings	5.00 / 5.25
Men's Corduroy	4.50 / 5.00
Khaki Canvas	— / 5.50
B. V. D. Cuttings	10.00 /10.25

Domestic Rags (old)
(F.o.b. Boston)

	Per 100 lbs.
No. 1 Whites, Repacked	3.00 / 3.50
No. 1 Whites, Miscellaneous	2.50 / 3.00
Twos and Blues, Repacked	— / 2.00
Cotton Pants & Overalls	2.50 / 2.75
No. 1 Roofing Stock	.95 / 1.10
No. 2 Roofing Stock	.85 / 1.00
Roofing Bagging	.75 / .80

MATERIALS

Blanc Fixe

Prices firm. Supply adequate. Heavy demand. Currently quoted at $85.00 in bags, car lots, at works, 6 cents per pound, l.c.l., deld. By-product supply somewhat restricted. Quoted at $77.50 per ton, car lots, at works, 6 cents per pound, l.c.l., deld.

Bleaching Powder

Demand improved. Prices steady. Prices range from $4.50 to $5.00 per 100 pound drums, l.c.l., works.

Casein

Argentine market dull as price firms after heavy post-devaluation buying. New production underway. U. S. supply light. Current prices on processed acid precipitated grades 22½ to 23 cents, imported grades 17¾ to 18 cents, f.o.b. shipping point, car lots.

Caustic Soda

Contract prices for 1950 unchanged. Demand heavier. Stocks adequate for prompt shipment. Solid caustic is reported at $3.05 per cwt. flaked and ground is quoted at $3.45 per cwt., in 400 pound drums, $3.95 per cwt. in 100 pound drums —car lots, at works; liquid 50 percent in tank cars at $2.40 per cwt.; liquid 73 percent in tank cars at $2.50 per cwt., at works.

China Clay

Demand strong. Supply of domestic and imported ample. Domestic airfloated filler quoted at $10 per ton, water-washed $11.00, car lots, f.o.b. mines. Coating clay is $16 to $30. Imported clays repriced to $15.20 and $28.35 short tons, export warehouse.

Chlorine

Demand strong. Supply condition somewhat easier as water requirements lessen. Prices firm at present levels for 1950 contracts. Currently quoted at $2.40 per cwt. in single unit tank cars; at $2.70 to $3.90 per cwt. in multi-tank cars, f.o.b., works.

Rosin

Demand irregular. Prices fluctuate daily. Buyers lag for lower prices. Gum rosin in drums per 100 pounds net in car lots, f.o.b. Savannah, B, $5.75; G, H, I, K, $6.64; wood rosin, per 100 lbs., car lots f.o.b. Savannah; B, $4.25; FF, $5.50.

Rosin Size

Demand steady. Supply good. Seventy percent gum and pale wood grades, tank cars, $5.65 to $5.75 f.o.b. southern shipping point.

Salt Cake

Improved demand noted. Domestic quoted at $22.00/$24.00, f.o.b. shipping point, freight allowed to destination.

Soda Ash

Prices ease slightly for 1950 contracts effective Oct. 1. Demand gains. Supply easy. Current prices, car lots per 100 pounds; light ash in bulk, $1.00; in paper bags, $1.25.

Starch, Corn

Prices guaranteed at Oct. 1 levels to Oct. 15. Demand strong. Supply ample. Pearl grade currently quoted at $4.82 per 100 pounds; powdered starch at $4.93 per 100 pounds; white corn dextrine at $6.09 per 100 pounds; car lots, f.o.b. Chicago.

Starch, Potato

Heavy paper and textile demand tightens supply. Idaho high grade quoted at $7.00 cwt. l.c.l., ex N. Y. whse. New production quoted at $5.00 cwt., car lots, f.o.b. shipping point. Maine supply exhausted. New production not underway. No quotation.

Sulphate of Alumina

Demand steady. Prices firm. Supply good. The commercial grades are quoted from $1.50 per 100 pounds, in bags, car lots, f.o.b. works. Iron free is $2.50 per 100 pounds in bags, car lots, at works.

Sulphur

Supply ample. Demand sustained at good level. Prices firm. Annual contracts are quoted at $18 per long ton, f.o.b. mines; $19.50, f.o.b. vessels, Gulf ports. Export price f.o.b. Gulf ports is $22.00 per long ton.

Talc

Demand continues far ahead of supply. Prices steady. Domestic grades are currently quoted at $23 to $28 per ton in 50 lb. paper sacks, car lots, f.o.b. mills; Canadian at $35 and up per ton.

Tapioca Flour

Supply liberal. Fair demand. Dextrinizable grades range from $10.25/$10.75 cwt. for superior high grades to $9.00/$9.50 cwt. for highs, on dock Atlantic and Gulf ports. Medium grades range from $7.00/$7.25 cwt. on dock, N. Y., and are tight in supply, prices firm.

Titanium Dioxide

Demand picks up. Supply ample. Prices firm. Anastase 19½c pound carload lots, 20c l.c.l., rutile, 21½c pound carload lots, 22½c l.c.l.; 50-pound bags, f.o.b. plant, actual freight allowed.

LETTERS

Dear Mr. Heitzeberg:

The item appearing on page 10, issue of September 29, 1949, of the Paper Trade Journal relative to a newsprint production record at Great Lakes Paper Company is in error.

On August 25, 1949 the Great Lakes Paper Company did establish a world's paper machine production record by producing 268.053 tons in 24 hours.

The statement relative to establishing a world's record of 503 tons per 24 hours for a two-machine mill is not true. The world's record for a two-machine mill, to the best of our knowledge, was established by the Quebec North Shore Paper Co., at Baie Comeau, Quebec, in January 1949 when this mill produced 520.81 tons in 24 hours on its two 262 inch machines.

This item was brought to your attention just to keep the record straight.

VERNON L. TIPKA,
Engineer
Newsprint Service Bureau
New York, N. Y.

FINANCIAL RECORD •

	Per Share Earnings Calendar Year 1948	Per Share Earnings 12 Mo. to Approx. 6/30/49	Indic. Annual Divid. Rate	Oct. 10 Approx. Market Price
PREFERRED STOCKS				
Armstrong Cork Co. $3.75 Cum.	$46.33*	$38.47*	$3.75	97⅝
Armstrong Cork Co. $4.00 Cum. Conv.	46.33*	38.47*	4.00	110½
Celotex Corp. 5% Cum.	26.42c	10.33p	1.00	16⅜
Champion Paper & Fibre $4.50 Cum.	99.97f	19.91r	4.50	97¾
Container Corp. of Amer. 4% Cum.	105.41	99.87	4.00	99½
Crown Zellerbach $4.20 Cum.	61.84i	61.00p	4.20	101½
Crown Zellerbach $4.00 Cum. Conv. 2nd	58.51i*	57.90p*	4.00	98
Dixie Cup Co. $2.50 Cum. Conv. Cl. A	10.10	10.04	2.50	48¾
Flintkote Co. $4 Cum.	83.25	66.07	4.00	103¼
Robert Gair Co., Inc. 6% Cum.	17.08	13.73	1.20	17⅝
International Paper Co. $4 Cum.	263.00	254.71	4.00	101½
Johns-Manville $3.50 Cum.	209.89	212.03	3.50	112½
Kimberly Clark Corp. 4½% Cum.	80.74	74.36	4.50	101¼
Kimberly Clark Corp. 4% Cum. Conv. 2nd	41.59*	44.25*	4.00	103
MacAndrews & Forbes 6% Cum.	62.23	58.66	6.00	135½
Mead Corp. 4¼% Cum.	73.46	68.78k	4.25	91⅜
Mead Corp. 4% Cum. Conv. 2nd	29.91*	24.30k*	2.00	32½
Paraffine Cos. Inc. 4% Cum. Conv.	156.11	136.31	4.00	103
Rayonier Inc. $2 Cum.	16.43	13.99	2.00	30⅞
St. Regis Paper Co. 4.40% 1st A	79.90	51.11	4.40	85½
Scott Paper Co. $3.40 Cum.	59.06	55.14	3.40	95¾
U. S. Gypsum Co. 7% Cum.	314.45	296.82	7.00	185¼
United Wallpaper Inc. 4% Cum. Conv.	(d)0.79	20.50	2.00	26⅞
West Virginia Pulp & Paper 4½% Cum.	79.45c	69.93p	4.50	108¼
COMMON STOCKS				
APW Products Co.	$0.73	(d)$0.56	(m)	3½
American Writing Paper Corp.	(d)0.15	(d)0.16	$0.25	6⅛
Armstrong Cork Co.	7.54	6.13	3.00	48⅞
Celotex Corp.	7.21c	2.75p	1.00	17⅛
Certain-Teed Prods. Corp.	4.02	3.21	1.00	14
Champion Paper & Fibre	8.70f	1.70r	2.00	25¼
Congoleum Nairn Co.	5.78	4.92	2.25	27⅞
Container Corp. of America	10.12	9.52	4.50	38½
Crown Zellerbach	6.70e	6.68p	2.00	28¼
Dixie Cup Co.	6.70	6.65	1.50	32¾
Eastern Corp.	4.76	1.27	(h)	11⅝
Flintkote Co.	5.86	4.40	2.50	27½
Robert Gair Co., Inc.	2.67	2.10	0.70	7¾
Great Northern Paper Co.	4.63	5.32	2.80	39⅝
International Paper Co.	16.73	16.19	5.00	62⅞
Johns-Manville Corp.	5.22	5.27	2.00	42
Kimberly Clark Corp.	5.02	4.55	1.65	24½
MacAndrews & Forbes Co.	3.68	3.56	2.50	35½
Marathon Corp.	4.11c	3.42	1.40	21⅞
Mead Corp.	6.36	5.84k	1.00	13¾
National Container Corp.	2.28	1.38	0.40	7
Paraffine Cos. Inc.	2.45	2.14	1.20	19½
Rayonier, Inc.	9.09	7.55	2.00	24⅞
Ruberoid Co.	11.80	9.48	3.25	54
St. Regis Paper Co.	2.71	1.64	0.60	7⅞
Scott Paper Co.	4.15	5.02	2.50	60½
Sutherland Paper Co.	6.02	4.92	2.50	36½
Union Bag & Paper Corp.	9.17	6.50	3.00	26⅛
United Board & Carton	2.04b	(d)1.72k	(e)	8
U. S. Gypsum Co.	15.04	14.18	6.00	100⅛
United Wallpaper	(d)0.10	0.59	(n)	3⅜
West Virginia Pulp & Paper	11.33c	9.70p	3.00	43⅛

(a) 12 months to approximately 3/31/49
(b) Year ended 11/23/48
(c) Year ended 10/31/48
(d) Deficit
(e) Omitted dividend 2/4/49
(f) 11 months to 3/31/49
(g) 12 months to approximately 1/31/49
(h) Directors took no action on 8/2/49 dividend—last payment 5/2/49
(i) 12 months to approximately 4/30/49
(j) 8 months to 12/31/48
(k) 12 months to approximately 6/12/49
(m) Directors took no action on July, 1949, dividend—last payment 1/10/49
(n) Last payment 25c, 9/16/47
(p) 12 months to approximately 7/31/49
(r) 3 months to 6/30/49
(s) 12 months to 8/20/49

(*) Earnings per combined preferred shares.

Note: Approximate market prices are as of Monday's closing, instead of Tuesday's, this week only, because of Columbus Day holiday.

Dividends Declared

St. Croix Paper Co. has declared a dividend of one dollar per share, payable October 15 to holders of record, October 3.

Oxford Paper Co. has declared a dividend of ten cents per share on its common stock, payable October 15 to holders of record, October 1.

Lynch Evaluates Devaluation

By M. L. SCHWARTZ

OTTAWA—With some 75 per-cent of Canada's total available pulp and paper production exported to the United States, devaluation of the Canadian dollar should prove profitable to Canadian pulp and paper companies, according to a statement issued by E.

Building

- **FOR THE PAPER INDUSTRY**
- We design, build, and equip paper and pulp mills . . . steam generating plants . . . and facilities for eliminating stream pollution.
- Under one contract and one responsibility, we deliver jobs complete, ready for operation.
- We also furnish engineering reports and surveys. Current cost data available at all offices.

The H.K. Ferguson Co.
INDUSTRIAL ENGINEERS AND BUILDERS

THE FERGUSON BUILDING • CLEVELAND, OHIO
OFFICES IN NEW YORK, HOUSTON, CHICAGO, CINCINNATI AND LOS ANGELES

deoxidant

The use of "Virginia" Liquid Sulfur Dioxide (SO_2) after peroxide bleaches such as the Solozone process will adjust the pH and remove the oxygen. This is effective in stabilizing the bleach and preventing color-reversion. "Virginia" SO_2—sold under our trade-name of Esotoo—is 99.98+ percent pure. It is available for prompt delivery in any quantity, in cylinders, drums, or tank cars.

Send for descriptive literature on "Virginia" Liquid Sulfur Dioxide. Write Virginia Smelting Company, West Norfolk 3, Virginia.

VIRGINIA
Liquid Sulfur Dioxide

T. Lynch & Co., of Toronto, adding that there will, of course, be offsetting factors so that the whole of the ten dollar a ton apparent increase in price on shipments to the United States market will not be carried through to net profits. The statement points out the following:

"In the first place the greater currency devaluations which have just taken place in the Scandinavian countries may mean some increase in competition for Canadian companies in the U. S. market. No further decline in prices for pulp or most grades of paper seems probable. In fact, the reductions which have already taken place make it seem more probable that some upward revisions may be seen. On the other hand, the price of contract newsprint has remained firm at $100 a ton New York and the possibility of U. S. publishers using the present change in currency values to try and obtain a reduction in the contract price of newsprint must not be overlooked.

"Again the expected rise in the general Canadian price level will probably raise operating costs to some extent, while taxes will take their portion of the profits. Nevertheess, the net earnings of our pulp and paper companies should be considerably improved. The amount of the increase in earnings on the shares of the different companies will vary in each case depending on (1) the size of production, (2) the percentage exported to the United States, and (3) the number of common shares outstanding.

"The accompanying table is meant as an approximate guide to the possible extent that earnings per share of the leading Canadian pulp and paper companies will be affected by each dollar of the increase they carry through to net profits," the statement points out.

"It has been our contention for several months that paper stocks, as a group, were selling at too low a level in relation to present and prospective earnings. The relatively small rise which took place in the prices of paper shares following the devaluation of the Canadian dollar does not seem to have adequately reflected the prospective rise in earnings.

"It is our opinion that paper stocks purchased at current levels will ultimately show a very considerable profit

MARKETS . . . . .

The Paper Market

Report Prepared by the Paper Committee of the National Ass'n. of Purchasing Agents, under the supervision of Chairman Edgar E. McCulley, Courier-Journal Lithographing Co., Inc., Louisville, Ky.

October 11, 1949.

Delivery dates have been gradually extended by some mills, from 1, to 2 and 3 weeks. This is a comforting backlog and accounts for the more optimistic feeling now in evidence at the mill level.

It has caused some concern to buyers who had become pleasantly accustomed to the practice of ordering today and finding mills able to deliver tomorrow. Any radical and prolonged change in mill delivery promises will require a revision of lead time and inventory control thinking of buyers; so, an examination of the facts may be of some assistance.

Improved mill backlogs generally started in July, when paper and board production amounted to 1,351,000 tons, which was 204,900 tons below June and 329,700 tons less than the production for July, 1948.

July production was only 62.5 percent of capacity for the industry as a whole, the paper section operating at 66.7 percent capacity and the board section operating at 59.9 percent capacity. This unusually low production, definitely less than actual consumption, was largely due to Midsummer vacation shutdowns.

Consumers were operating at minimum inventory levels and this month of unusually low production carried a considerable portion of orders actually placed or pending into the August production schedule. Adding August orders to this base resulted in somewhat longer delivery schedules for August and September.

	Approximate Number of Shares Per Ton of Production (1948)	Approximate Effect of Each $1 Net Profit Per Ton on Earnings Per Share	Indicated 1949 Earnings BEFORE Devaluation of Dollar	Price of Stock	
				Sept. 2	Sept. 21
Abitibi Power & Paper	1½	$.67	4.80*	14⅜	16
Bathurst A	.5¾	.30	3.36*‡	18¾	20½
Brown Co.	15¾‡	.06‡	5.25‡	2⅞	3⅛
Consolidated Paper	.8‡	.32‡	4.18*‡	16⅜	17⅞
Fraser	.8¼‡	1.25‡	5.25*	20½	23
Great Lakes Paper	2¼	.44	2.48*	11	13
International Paper	.8¾‡	.27‡	11.72*	57	61
Minnesota & Ontario	6¾‡	.15‡	2.70*	14	15⅝
Powell River	4½	.23	5.26*	39	40
Price Bros.	1¾‡	.80‡	12.00*	52	55½

* Indicated yearly rate in 1949 reached by doubling ½ year's figure.
‡ Canadian production.
a After giving affect to participation feature applying to Class B shares.
b Based on capacity. Production figures not published.
c Installed capacity in Canada. Canadian production figures not published.
e Estimate.

Paper and board production for 1949 has shown a consistent decline and raw materials and productive capacity seem ample to take care of the current monthly mill demand, converted to a yearly basis, with no appreciable effect on prices except, perhaps, in the case of kraft.

No substantial modification of current buying practices or inventory policy seems necessary, unless justified by expansion of production schedules and to cover definite needs for operations.

WOOD PULP—*By H. L. Weber, Fibreboard Products Co., Inc., San Francisco, Calif.*

Supplywise, there is very little change in the pulp picture from a month ago. There are more than adequate supplies of unbleached grades. There is still some tightness in the bleached grades and in groundwood pulp.

Pricewise, the situation is somewhat confusing. Devaluation of foreign currency had little effect on the price of bleached pulps, but surely did put the skids under the price of foreign unbleached grades and groundwood. Domestic producers have not, as yet, met some of the low quotations now being offered on Scandinavian pulps. It is a little too early to determine whether these lower prices of Scandinavian pulps will stay down at their present level, or what domestic and Canadian producers will do to meet them. There is certainly no apparent firmness in any of the unbleached grades.

Use of pulp has been on the increase for several months, and there is no indication yet of any letup in this condition. Production, however, is still able to take care of demand.

KRAFT PAPER—*By T. H. Treadwell, W. C. Ritchie & Co., Chicago, Ill.*

Since our last report, there has been a definite firming of the market. Mill price on kraft wrapping was increased ¼c per pound and some mills who were granting 5 percent discount have withdrawn it.

Deliveries are now scheduled on 6- to 8-week basis.

Mills have resumed restricting their customers to tonnage allotment.

FINE PAPERS—*By E. E. McCulley.*

The fine paper market is more or less static. Supplies are ample and prices insure an adequate margin to producers if their plants can be kept operating 6 days per week.

The market is extremely competitive and prompt and adequate attention is given specific and particular price, special grade and hot delivery problems when justified by consumers' conditions.

Keen competition exists in improving mill brand brightness and general quality. Commendable results have been attained also in improved performance presswise, to meet demands of consumers who, by necessity, are stepping up press speeds and quality to improve their competitive position.

NEWSPRINT—*By T. A. Corcoran, Courier-Journal and Louisville Times Co., Louisville, Ky.*

If two newsprint buyers meet, the first topic of conversation will be the probable effect of the devaluation of foreign currencies on the price of newsprint. Since 84 percent of the U. S. supply is currently coming from foreign sources, it would seem that it would be one of the first commodities affected. However, Canadian newsprint producers plan no cut in prices as a result of devaluation, according to a report from Montreal carried in the September 20 *Wall Street Journal.* This stand seems inconsistent with action taken in July, 1946, when the situation was reversed and the Canadian dollar was changed to par with the U. S. dollar. At that time, Canadian manufacturers raised the price of newsprint from $68 to $74.80, stating "this increase only offsets the loss caused by the recent revaluation of the Canadian dollar."

The first break will probably come from the Scandinavian producers, as their devaluation has been greater, and they have a little more difficulty maintaining their sales volume. This has been true for some time in the case of pulp and has come about in newsprint the last few months. In August, for example, imports of newsprint from Europe were 40 percent less than in the same month last year. Before the war, foreign tonnage sold at a price substantially lower than the Canadian or U. S. product. Since the war, it has sold at or above the domestic price. It is possible that devaluation may enable them to restore the prewar pattern.

Total U. S. consumption in August fell 32 tons below the same 1948 month, but for eight months it is 6 percent ahead of last year.

Shipments to U. S. users in August amounted to 458,478 tons, exceeding consumption by 55,888 tons. Thus, stocks increased by this amount and represented 50 days' supply at the end of August, compared to 49 days a month earlier and 39 days a year ago.

BOXBOARD—*By Stuart Edgerton; United States Rubber Co., New York City.*

Since our last report, there has been a definite "firming - up" of boxboard prices and, at present, price is very much a matter of negotiation.

An analysis of the reports of the boxboard industry would seem to indicate that there had been a decided falling off in the collections of the waste paper, particularly those grades used in the manufacture of plain chip, SML chip and news lined chip.

While the production rate has fluctuated, not too widely, there has been no decided increase but, based on the reports, the backlog of board orders is higher as of this writing than for several weeks past.

All the above would seem to indicate that wise buyers of boxboard should watch their market reports rather carefully, be very specific in the specification of the qualities they require, and negotiation as to price would seem very necessary.

PAPER CONTAINERS—*By Lee R. Forker, Quaker State Oil Ref'g. Corp., Oil City Pa.*

The *New York Times* has published net earnings comparison for the first six months of this year with the same period for 1948, which should be of interest to purchasing agents handling paper containers.

It reported that 687 companies published statements showing a 13 percent decline in net profits, as compared with a 44 percent decline in net profits for 13 container and seal manufacturers.

As every purchasing agent knows, paper container prices have declined slightly compared with last year, and it can be reasonably assumed, therefore, that the decline in profits can be traced primarily to the decline in volume. Inventories of paper containers have declined to date this year in most cases, and it is further reported that the food pack involving paper containers has been less than that for 1948.

There is nothing now to indicate any change in the trend of volume requirements for the rest of this year, and it is quite possible that paper containers will be available at lower prices than now exist.

WEST COAST CONDITIONS — *By Horace Duckenfield, Metropolitan Life Insurance Co., San Francisco, Calif.*

A true picture of the conditions in the paper industry on the West Coast cannot be too clearly defined from our location here in San Francisco, due to the prolonged warehouse strike, mainly because the situation in the local market is not nearly representative of West Coast business.

Supply in every line, however, seems to be quite adequate. Demand is still low in practically all items. Local houses appear to be able to service all requirements through drop shipments from their various branches, aided also by the few houses not affected by the strike.

It is anticipated that demand may be stepped up somewhat in the next few weeks, at least in printing paper, which might be an indication that the large manufacturers and advertisers have decided to proceed with their merchandising and advertising campaigns through the coming Winter. If this procedure develops, it will probably be followed by increasing demand by large and small concerns in practically all lines of merchandise.

IMPORTS . . . . .

IMPORTS AT NEW YORK

Week Ending Oct. 8

Newsprint

R. A. Olsen, Kermic, Donnacona, 390 rolls.
News Syndicate Co., Colabee, Baie Comeau, 6228 rolls.
H. C. Craig Co., Donpaco, Donnacona, 315 rolls.
R. A. Olsen, Newscarrier, Donnacona, 310 rolls.
N. Y. Sun, Fort Avalon, Cornerbrook, 955 rolls.
Hearst Enterprises, Inc., Fort Avalon, Cornerbrook, 404 rolls.
N. Y. Times, Fort Avalon, Cornerbrook, 693 rolls.
N. Y. World Telegram, Fort Avalon, Cornerbrook, 1836 rolls.
Heller & Ushan, Inc., Fort Avalon, Cornerbrook, 43 rolls.

Baryta Paper

W. Reimerdes, Claiborne, Bremen, 1 cs.
W. Reimerdes, American Shipper, Bremen, 1 cs.

Surface Coated Paper

Gevaert Co. of America, Arkeldyk, Antwerp, 63 cs.

Printing Paper

Oxford University Press, American Scout, London, 20 cs.
Winsor Newton Inc., American Shipper, London, 1 cs.

Tracing Cloth

Keuffel & Esser Co., American Scout, Manchester, 14 cs. (bleached cotton).

Filter Paper

H. Reeve Angel & Co., Inc., American Shipper, London, 15 cs.

Drawing Paper

H. Reeve Angel & Co., Inc., American Shipper, London, 6 cs.

Writing Paper & Envelopes

H. W. Robinson Co., American Shipper, London, 1 cs.

Paper Napkins

H. W. Robinson Co., American Shipper, London, 4 cs.

Paper Towels

American Express Co., Britannic, Liverpool, 201 pkgs.

Tissue Paper

B. F. Drakenfeld & Co., Britannic, Liverpool, 4 cs.

Photo Paper

Corda Expoer Co., Exceller, Tangier, 9 cs.
J. J. Gavin & Co., Queen Elizabeth, Southmapton, 4 cs. (unsensitized).
Alco Photo Supply Corp., Queen Elizabeth, Southampton, 3 cs.

Miscellaneous Paper

Saentis Inc., Arkeldyk, Antwerp, 1 cs.

Rags, Baggings etc.

New England Waste Co., Pres. Monroe, Bombay, 110 bls. cotton waste.
Lush Cotton Products Co., Pres. Monroe, Bombay, 200 bls. cotton waste.
New England Waste Co., Loide Peru, Santos, 232 bls. old jute bagging.
J. Eisenberg & Son, Arkeldyk, Antwerp, 13 bls. rags.
(———), Arkeldyk, Antwerp, 2 bls. paperstock.
New England Waste Co., Arkeldyk, Rotterdam, 98 bls. cotton waste.
American Express Co., American Scout, Manchester, 8 bls. wool rags.
J. Eisenberg & Son, American Scout, Manchester, 83 bls. wool rags.
J. B. Lockwood & Co., American Scout, Manchester, 12 bls. wool rags.
(———), Elysia, Glasgow, 129 bls. bagging.
Chase National Bank, Elysia, Glasgow, 96 bls. jute waste.
E. J. Keller Co., Inc., Elysia, Glasgow, 38 bls. bagging.
New England Waste Co., Flying Enterprise, Rotterdam, 127 bls. cotton waste.
E. J. Keller Co., Inc., Flying Enterprise, Rotterdam, 84 bls. old jute bagging.
Midwest Waste Materials Co., Flying Enterprise, Rotterdam, 77 bls. scrap bagging.
L. Gottlieb, Flying Enterprise, Rotterdam, 207 bls. jute rags.
J. Eisenberg & Son, Agwidale, Havana, 32 bls. rags.
Royal Manufacturing Co., Raphael Semmes, Antwerp, 55 bls. cotton waste.
J. J. Ryan & Sons, Khedive Ismail, Genoa, 228 bls. cotton waste.
Chase National Bank, Khedive Ismail, Genoa, 185 bls. cotton waste.

A. de Vries Trading Corp., Exermont, Genoa, 343 bls. scrap bagging.

Darmstadt Scott & Courtney, Agwimonte, Tampico, 37 bls. cotton linters.

Old Rope

(———), Manipur, Calcutta, 55 bls.

Hidecuttings

Karr Ellis Co., Britannic, Liverpool, 249 bags, (dry).

Woodpulp

Price & Pierce, Ltd., Gripsholm, Gothenburg, 500 bls. wet unbleached sulphite pulp.

Perkins Goodwin & Co., Gripsholm, Gothenburg, 1 pcl. woodpulp (sample).

IMPORTS AT BOSTON

Week Ending Oct. 8

(———), Arkeldyk, Rotterdam, 5 bls. rags.

Rockland Atlas National Bank Boston, Arkeldyk, Rotterdam, 5 bls. rags.

IMPORTS AT NORFOLK

Week Ending Oct. 8

A. de Vries Trading Corp., Arkeldyk, Rotterdam, 98 bls. scrap bagging.

A. de Vries Trading Corp., Arkeldyk, Antwerp, 78 bls. scrap bagging.

Chase National Bank, American Scout, Manchester, 69 bls. old bagging.

National City Bank, Exermont, Genoa, 158 bls. old bagging.

Irving Trust Co., Marchen Maersk, Kobe, 100 bls. waste bagging.

IMPORTS AT WILMINGTON

Week Ending Oct. 8

Scott Paper Co., Julius H. Barnes, Marathon, Ontario, 8,740 bls. wood pulp.

Imports Sans Licenses, Confiscable

WASHINGTON—A Ceylonese government order dated September 27 requires importers in that country to notify their suppliers that goods shipped to Ceylon without valid import licenses are subject to confiscation, the Department of Commerce reported this week. Under an earlier order, licenses granted before August 1 had to be revalidated.

MISCELLANY . . . .

Massachusetts August Employment

BOSTON — Employment in Massachusetts paper industries from August 1948 to August 1949 showed a drop of 2,500 workers according to figures released by the Mass. Department of Labor and Industries and the U. S. Bureau of Labor Statistics. The period, July 1949-August 1949, was marked by a drop of 1,700 jobs. This drop was in accordance with a trend which saw producers of durable goods experience an over-all loss of 1,600 workers during the month. The aggregate decrease in these industries was 3,400 jobs. Compared with August of last year all segments of the state's economy as measured by employment, except transportation, finance and government, showed a substantial decline.

Wisconsin Work Picture

MADISON, WIS.—Estimated number of workers in the paper and allied products industry in Wisconsin during July was 27,200 as against 27,400 for the month of June. The estimated weekly payroll during July was $1,573,000; for June, $1,571,000. Amount earned per week in July was $57.78; in June, $57.42. Average hours worked per week was 41.7 in July; in June, 41.2. The average hourly rate in July was 138.7; in June, 139.3.

Eastern Conservation Committee

NEW YORK — Eastern mills during September bought from dealers as much waste paper as they purchased during the ninth month of last year. Consumption last month likewise was about the same as during September, 1948, the Eastern Conservation Committee of the Waste Paper Consuming Industries reported.

This was in strong contrast to mill receipts and consumption during the first seven months of this year for which national figures are now available. The waste paper consuming mills of the United States during the first seven months of this year purchased 3,464,000 tons of waste paper, a decline of 1,041,000 tons from the corresponding period of 1948. Consumption during this period, which was 3,538,000 tons, was 967,000 less than during the first seven months of 1948.

While it is generally expected that consumption this month will be as great as during September, there is no indication anywhere of any possible shortage in the supply of paper stock. Mill inventories have been steadily maintained, and during recent weeks mills consuming old corrugated boxes have not only been able to get sufficient for current operations but have added substantially to their stocks on hand. News grades appear to be very plentiful. Quality packed No. 1 mixed continues to be in steady demand. About 30 percent of all the waste paper consumed by the Eastern board mills is of the mixed grade. Three years ago it was almost 40 percent.

Dealers who are meeting the supply situation say they are doing so without difficulty, especially as to the bulky grades of waste paper. The recent rise in the price of scrap metals amounting to more than nine dollars per ton from the year's low in June has brought back into activity many peddlers who during the spring and summer months turned from scrap and waste paper collections to the selling of fruits and vegetables. News and old corrugated waste paper is now being collected by these pedders as well as metals with the result that most packers now find that they are able to meet all mill demands for quality paper stock.

Notwithstanding the substantial increase in the demands of the mills for waste paper over the summer months, the mills are still insisting upon packing of the first quality. There have been a few reports recently of poorly packed waste paper being shipped to mills, although substantially the most of the offerings have been of very good quality. Prompt rejections of inferior stock generally has been the result of packers' failures to maintain quality packing.

"There was some indication during the first week of October that a freer supply of the so-called high grades might become available soon as several paper mills which now consume fair-sized quantities of the pulp substitutes are considering abandonment of the use of waste paper in their furnishes. This would make more high grades available for the board mills which during the last three years have almost doubled their consumption of the better grades." Colley S. Baker, director of the committee stated.

Eastern Cons'v. Comm. Objectives

BROOKLYN, N. Y.—Felix J. Troiano, chairman of the United Waste Material Dealers, in a letter to H. E. Holman of the Office of Domestic Commerce of the U. S. Department of Commerce, Washington, D. C., dated September 20, said:

"The Committee for the United Waste Material Dealers met several days ago to discuss the various problems feared by all the licensed dealers for some time. During our discussions at the conference of July 18, held at your office, we made known how the activities of the Eastern Conservation Committee can act to depress the prices of waste paper in the industry, should these prices at any time begin to rise above our cost of production.

"It must be agreed here that if the motives of such an operation are directed toward controlling prices, such operation is unlawful. It is for this reason that we requested that the motives of such operations be investigated. We have learned in recent days of specific instances of various organizations setting into motion various collection facilities. For the past three Sundays the Fire Department of Rutherford, N. J., has collected waste paper. One of the dealers visiting Patchogue, L. I., ran across a package of book matches advertising the waste paper shortage. I have requested that he relocate such evidence of any new salvage campaign with the thought that possibly it might have been a leftover from the earlier salvage campaigns. The wording, which I do not recall completely now, was not of a war effort nature. Should these campaigns get under way through amateur and unlicensed salvagers, we shall in the near future be confronted with an over-supplied situation beyond the control of the industry once again.

"The effect of the activities of this Conservation Committee on the waste paper industry was predicted at the conference of July 18. We little thought that so soon after this conference, this prediction would come to pass. The first stages of it are now at hand; namely, first, the publicity of a shortage in waste paper; secondly, the encouragement to amateur agencies to collect waste paper. The industry at this point is very anxious that the U. S. Commerce Department step in to investigate and declare themselves of their findings.

"May we learn at an early date any progress which your Department has made to date on this one important point in the program which we presented for the improvement of the

maladjusted waste paper industry."

Replying on September 26 to Mr. Troiano's letter, Mr. Holman said in part: "Insofar as I can ascertain, the Eastern Conservation Committee has no intention of starting a campaign of any kind to stimulate the collection of waste paper, either in the eastern territory or in any local community.

"On September 19, the committee published its bulletin, from which I quote:

"'The Eastern Conservation Committee has planned no promotion campaign for waste paper at this time.'

"As far as we have been able to learn, they have not deviated from this publicized statement."

Adamson Bill Defeated

OTTAWA.—The Adamson Bill, aimed to amend the Navigable Waters Protection Act to empower the Canadian Government to police the discharge of material into navigable waters, having the effect of polluting them, was defeated in Canadian Parliament, with Transport Minister Lionel Chevrier and others speaking against the bill, though the sponsor of the bill used a recent judgment of the Supreme Court of Canada involving a paper company in an attempt to meet the arguments of opponents.

As the Act stands it mentions specifically waste products of sawmills. The Adamson Bill attempted to extend control to liquids, such as oil, chemical refuse and sewage.

Opponents of the bill argued that it was unconstitutional since it possibly went beyond the powers of the federal government or Parliament because it pertained to matters under provincial jurisdiction. Others argued that the methods chosen in the bill favoring anti-pollution regulations were not able to meet the case.

"However laudable is the intention of the member for York West (Mr. Adamson), there can be no doubt that there would not be the slightest use of attempting to find a remedy in a place which has no jurisdiction to begin with and never could have it," said Transport Minister Chevrier, adding pollution was a matter that concerned health and thus was under provincial jurisdiction.

Mr. Chevrier pointed out that pollution of international waters between Canada and the U. S., is now under study by the International Joint Commission, and, therefore Canada's Parliament had no right to go into the matter further since it was outside the powers of Parliament in any case.

German Trade Mission to Canada

OTTAWA—Efforts to stimulate trade between Canada and Germany are being made in Ottawa, with a German trade mission expected to arrive here shortly to open negotiations with Canadian Government officials. The German mission comprises a staff of eight government officials, manufacturers and trade representatives.

PTA Scouting for Talent

CINCINNATI—John L. Richey, secretary-treasurer of the Paper & Twine Ass'n., reports that the board of directors of the Association has established itself as a Board of Awards through which to recognize the accomplishment of a manufacturer, a converter and a paper wholesaler in service to the paper industry and trade during the year 1949. Mr. Richey states that nominations for such awards are invited and must be in his hands for action by the Board of Awards by March 1, 1950. The Board will then select the winners and announce them at the June Annual meeting of the Association.

"The terms have been left broad and will cover, for example, such things as the following," Mr. Richey explains.

"The mechanical development of a machine or process in paper manufacture.

"A chemical formula for use in the production or conversion of paper and paper products.

"The development or production of new converted items that contribute to better living, better merchandising, better transportation, greater sales or to the national security.

"Personal achievement by an individual benefiting the industry or trade.

"Personal service rendered by a member of the industry or trade to the industry or the general public, or any other outstanding accomplishment.

"All of the above is open to any member of the industry and trade. Therefore, if you know of any such person, send in their nomination in writing with full details of the basis upon which you make your recommendation and get it in to the Secretary not later than March 1, 1950," Mr. Richey urges.

SAPI Luncheon—Chicago

CHICAGO—At the annual Fall luncheon of the Salesmen's Ass'n, of the Paper Industry in the Grand Ballroom of the Stevens Hotel, September 27, Alan B. Helffrich of the St. Regis Sales Corp., who heads the Association, presided.

Honored guests were: L. A. Ramaker, president of the National Paper Trade Ass'n., and president of the Bouer Paper Co., Milwaukee; E. C. Magel of the Crescent Paper Co. of Indianapolis, vice-president of NPTA; W. G. Leathers, NPTA executive secretary; Stan Styles, assistant secretary of NPTA and former president of SAPI; A. H. Chamberlain, assistant to the president of NPTA; D. H. Keck, Western vice-president of SAPI; T. Donnell Evans, assistant vice-president of SAPI, who is Mid-Western sales manager of W. C. Hamilton & Sons, Inc.; and Dernell Every, executive secretary of the Kraft Paper Ass'n.

Sociability and entertainment were the keynotes of the meeting and formal speeches were "out."

There were only two items of business on the program. One: Presentation of the Gibson Trophy to Ed Rolain of the Mosinee Paper Mills Co. The trophy, provided by George Gibson, is given to the winner of the Western Division golf championship for the year. Mr. Rolain won the trophy in 1947 and 1948, permanently retired it at this meeting. Two: Bill Jones was presented with a silver tray in recognition of his work as chairman of the three golf tourneys held during the summer.

Ben Babbitt was chairman of the luncheon. He was assisted by Bill Wagley, Myron Krom and Jack Hall.

Olympic Peninsula R. R. Plan Revived

OLYMPIA, Wash.—The idea of a common carrier railroad on the Olympic Peninsula has been revived by T. S. Goodyear.

Who advocated the railroad to tap the virgin timber in the state's huge Sustained Yield Forest No.1. Mr. Goodyear is the supervisor of the forest, which lies between the Olympic National Park and the sea.

The truck haul of 70 miles from the southern edge of the forest, to Grays Harbor is too expensive—about $10 per thousand board feet—for the logging of pulp timber in the area, he said. He estimated that about 70 percent of the timber is pulp.

The supervisor added that the forest's topography was such that logically about 50 per-cent of the timber should move to Grays Harbor and the balance into the Port Angeles area.

A common carrier would insure competitive bidding for the timber, a higher return to the state, and a quicker harvest of the overripe forest. Mr. Goodyear said.

Lacking establishment of a common carrier. Mr. Goodyear suggested the building of a paper mill making cardboard and wrapping paper to utilize the pulp timber. Neither the Grays Harbor nor Port Angeles areas have such a mill.

Carl Berry, Seattle, has been given a $16,671 contract to make an aerial survey of the forest. The contract also requires Mr. Barry to make a preliminary topographic map and a timber type map. The survey must be completed by September 1, 1950, and the map 30 days later.

Mr. Goodyear said the C. M. & St. P. Railroad surveyed a route north from Grays Harbor to connect with its Port Angeles line several years ago.

Turning to U. S. Market

OTTAWA—Although it is known that officials are endeavouring to retain the United Kingdom market for Canadian newsprint in face of reports circulating now that British proposes to switch such large newsprint imports from dollar regions like Canada to soft cur-

rency markets in Scandinavia, including an admission in Canada's Parliament by Trade and Commerce Minister C. D. Howe about such efforts to hold the British sales, yet it is believed in usually informed circles that some Canadian newsprint producers will go "all out" to get more business in the United States.

In this regard, it is pointed out that Sir Eric Bowater, president of Bowaters Pulp & Paper Mills, has indicated in no uncertain words that his firm has hope of obtaining more United States business in newsprint selling in view of the anticipated loss of sales in the United Kingdom and has made it clear that his firm now is making plans to raise production in order to meet commitments in United States requiring deliveries in January, 1950. However, it is important that Sir Eric Bowater warned mill workers that production costs must go down and quality must go up if such plans to expand trade in the United States are to succeed. "The United States publishers can assure us a market only if the price is right," Sir Eric reportedly stated.

Likewise, in regard to sulphite pulp, he said markets in the sterling region have been lost but there were hopes of finding such business in the United States.

In addition, E. M. Little, president of the Anglo-Newfoundland Development Co., has gone on record with the statement, referring to the possible loss of newsprint business in the United Kingdom on account of dollar shortage, that the "American market is at present good, but if the business decline in the United States continues, newsprint must eventually be affected." He added that "the whole of the Canadian industry may be on short time next year but to what extent is difficult to forecast as yet."

Canadian Talc and Soapstone

OTTAWA—With ground talc, including soapstone and pyrophyllite, used in the paper industry and soapstone used extensively in the form of sawn blocks and bricks for lining the alkali recovery furnaces and kilns of kraft pulp and paper mills, the Canadian Government has just announced that the gross selling value of products in the talc and soapstone industry of Canada advanced to $309,823 for 28,780 tons in 1948 as compared with $266,377 in the preceding 12 months for 26,709 tons. Net selling value of products in 1948 was $280,573 as against $244,687 in previous year.

Imports into Canada of talc or soapstone totaled 7,798 tons at $213,438 in 1948 as against 8,472 tons at $196,697 in previous year and exports showed 5,052 tons of talc at $63,474 compared with 5,807 tons at $68,394.

The consumption of ground talc and soapstone in the pulp and paper industry in 1947 amounted to 1,899 tons compared with 2,872 tons in the preceding twelve months, report adds.

National Safety Congress

CHICAGO — Sessions of interest and value to the Pulp and Paper Section of the National Safety Council's congress here October 24-28 include the following:

October 24 — Monday: Registration, annual Council meeting and business meeting of the Pulp and Paper Section, to be addressed by D. J. Hardebrook, vice-president, Union Bag & Paper Corp., on "The Safety of American Freedom is Everybody's Job".

October 25—Tuesday: Early morning session, "The Strategy of Plain Talk", American Ass'n., of Safety Engineers meeting, and four addresses: (1) "Finding the Accident Facts", by E. A. Page; (2) Visual Education in the Mills", by J. A. Draper; (3) "Unusual Accidents in Paper Mills", by O. J. Sherman; and (4) "Specific Safety Technique", by E. G. Holtzman. Evening—Safety movies, including "Falling Timber" and "Accidents Don't Happen—Part V".

October 26 — Wednesday: Early morning session, "The Strategy of Plain Talk". "What We Need Most in Safety Engineering" and three round-tables—(1) Pulpwood Logging, (2) Sulphite Pulp Manufacturing, and (3) Sulphate Pulp Manufacturing". Banquet.

October 27—Thursday: Early morning session, "The Strategy of Plain Talk". "Maintaining Interest in Accident Prevention", Annual Luncheon and Presentation of Awards: two round tables, Paper Manufacturing and Paper Products, and (in the evening) the Congress Party.

October 28—Friday: Early morning session, "The Strategy of Plain Talk"; "Top Management in Safety".

Freight Service Delays Discussed

BRETTEN WOODS, N. H.—New England railroad men admitted privately on September 3, that the reason for post-war deterioration of freight service was the necessity for awaiting greater tonnage loads to offset a great increase in operating costs.

During the final public meeting of the New England Shippers' Advisory Board these officials reported great strides in Diesel operation on their lines since the war, but industrial traffic managers held that the main issue had been evaded.

This issue was spelled out by Frank J. Gill, traffic manager of the Oxford Paper Co., of Rumford, Me., who asked specifically why he no longer could depend on "second-morning delivery" of his product in Philadelphia, Baltimore and Washington.

A. H. Erlandson, traffic manager of the Sanford, Me., Paper Co., accused the roads of "lack of cooperation" in exchange operations resulting in losing track of cars.

Defending the position of the railroads, J. Frank Doolan, vice-president of the New York, New Haven & Hartford Railroad, declared that the "rules of the game should apply to both sides" and that if other forms of transportation received competitive advantages "it was no contest," although the rail carriers intended to "keep on fighting until the contest becomes a fair one."

Later, other railroad officials said that before the war they had been able to operate "three and four 50-car freights" a day, but that since the war, despite use of Diesel, costs had so increased that they were forced to operate "one or two 100-car trains."

Meantime, one official said, "we are having to fight the trucking interests, who pay half of their operating costs, while the public pays the other half" in gasoline taxes for highways and other subsidies.

Sharp Increase in August Production

NEW YORK — August production of paper and board was 1,758,000 tons, according to preliminary data just released in the August Statistical Summary of the American Paper & Pulp Ass'n. August showed the highest overall monthly production of the year to date, and increased 30 percent over the July low.

Data based on a world survey of approximately 80 paper consuming countries, exclusive of Russia, shows that the U. S. is by far the largest producer, importer and consumer of paper and board in the world. The study further shows that production of paper and board in the U. S., and Canada has increased 11,000,000 tons since 1937, in Latin America 350,000 tons and in Australasia 115,000 tons. Europe and Asia lost production, while Africa and the Near East made minor gains since 1937.

World data for 1948, derived principally from official sources, shows that world paper production was 39,392,493 tons, imports 8,094,572 tons, exports 7,418,453 tons and apparent consumption 40,068,612 tons. Apparent per capita world consumption was 42.62 lbs. Ten countries produced over 90 percent of the total paper and board production, with the United States and Canada leading in that order.

Sees Empire Within Republic

BOSTON—New England Paper manufacturers were informed on September 27 that opposition has begun to form in Congress to proposals for river valley power projects in this six-state area which are aimed at lowering substantially hydro-electric costs. Newest opponent is Rep. Plumley (R-Vt.) who has described the proposed New England river valley development as "destructive to individual enterprises" and "little empires within themselves."

"Aaron Burr was tried for treason for doing less toward setting up and establishing an empire within a republic than has been accomplished by those who set up the Tennessee Valley Authority," Rep. Plumley observed.

"This and other projects of a similar nature are tax-free, make no account to anybody, and destroy individual enterprises."

Rep. Plumley said he is "unalterably opposed" to objectives of legislation sponsored by Senators Green (D-R. I.) and Lodge (R-Mass.) and Representatives Furcolo (D-Mass.), Land (D-Mass.), Rogers (R-Mass.) and Woodhouse (D-Conn.), all of whom propose, in somewhat different form, river valley developments in New England similar to TVA.

Mazek Plane

WASHINGTON — Austrian specialists have perfected a new tapping instrument, the Mazek plane, named for its inventor, the current issue of *Unasylva* reports. The plane is said to be a great improvement on the tool of German design which is used in America, Germany, and in other countries. The chief advantages consist in the conservation of the wood, which is scarcely affected by the tapping operation; a 30 percent to 50 percent increase of efficiency in the work; a prolongation in the duration of tapping by at least 25 percent due to the fact that it can be done yearly and give the same amount of sap; and a 30 percent reduction in the loss of turpentine. These planes are easily operated with one hand and can be used either on a smooth surface, according to the French and Portuguese method, or on a grooved surface according to the American method. The instrument can be automatically adjusted to make incisions at desired regular intervals and the depth can also be automatically regulated. The instrument is also coming into use in countries other than Austria.

Canadian Asbestos Products Mfg. 1948

OTTAWA—Preliminary figures show that the asbestos products manufacturing industry of Canada had 17 plants in 1948 with an average number of 1,026 employes who received $2,098,000 in salaries and wages, the Canadian Government reports. Cost of materials at works was $4,404,000 and gross selling value of products at works $8,448,000, as compared with 12 plants in 1947, average of 1,236 employes who were paid $2,191,000 in salaries and wages, with cost of materials at works $3,080,000 and gross selling value of products at works $6,331,000.

"Country of Origin" Mandatory

OTTAWA — According to an Order In Council P.C. 4343, it is now designated that certain goods imported into Canada shall be marked with an indication of the country of orgin and the said marking, stamping, branding or labelling shall be as nearly indelible and permanent as the nature of the goods will permit, with such goods incuding empty paper or paper board folding or set up boxes or cartons, and empty plain or corrugated fibre board boxes for use as containers.

Canadian Rigid Insulating Board

OTTAWA — Production of rigid insulating board industry during August this year was 13,899,090 sq.ft., as compared with 19,362,115 sq.ft., in same month a year ago, though above the 12,199,876 sq.ft., of July this year and below the 19,057,011 sq.ft., of July a year ago, the Canadian Government reports. In the first eight months of 1949, such output advanced to 153,025,773 sq.ft. as against 142,755,576 in the corresponding period of last year.

This official report adds that domestic sales in this industry were 13,601,270 sq.ft., during August this year, including 9,441,872 sq.ft., of panel board, 984,084 of plaster base board, 2,097,708 of roof board, and 1,077,606 of miscellaneous board, as compared with 15,945,910 sq.ft., for August of last year, comprising 11,461,760 sq.ft., of panel board, 1,795,274 plaster base board, 1,487,955 roof board, and 1,200,921 miscellaneous board. In July this year, domestic sales totaled 13,609,111 sq.ft., including 9,701,759 sq.ft. of panel board, 786,808 plaster base board, 1,897,495 roof board, and 1,223,049 miscellaneous board, as compared with total of 14,624,584 sq.ft., in the same month last year, comprising 10,195,718 sq.ft. of panel board, 1,365,678 plaster base board, 2,150,084 roof board, and 913,104 miscellaneous board.

In the first eight months of 1949 such domestic sales increased to a total of 148,702,017 sq.ft., as compared with 118,586,020 in the corresponding period of last year. Such sales this year showed the following, with figures for the same period last year being given in brackets: 110,336,592 (83,671,040) sq.ft., panel board, 12,470,329 (11,818,623) plaster base board, 14,453,712 (15,398,749) roof board, and 11,441,384 (7,697,608) miscellaneous board.

The above figures represent square feet in terms of thickness reduced to one-half inch, except one firm reporting on a 7/16" basis. These are preliminary figures subject to revision.

Canadian Asbestos Paper Stocks

OTTAWA — Producers' shipments of asbestos paper stocks advanced to 7,273 tons during July this year as compared with 7,098 tons a year ago and reached a cumulative total of 45,655 tons in the first seven months of 1949 as against 24,706 tons a year ago in the corresponding period, the Canadian Government reports.

Producers' shipments in July this year showed the following for asbestos, with figures for the same month a year ago being given in brackets: Crude, 55 (136) tons; Spinning stocks, 3,086 (3,010); Shingle stocks, 13,262 (9,590); Paper stocks, 7,273 (7,098); Waste, stucco or plaster, 9,947 (11,731); Refuse or shorts, 29,182 (24,916); Sand, 1,930 (nil); Total, 64,735 (56,481).

Such shipments of asbestos in the first seven months of this year were as follows, with figures for the similar period last year being given in brackets:

Crude, 260 (513) tons; Spinning stocks, 8,464 (17,880); Shingle stocks, 39,525 (67,585); Paper stocks, 24,706 (45,655); Waste, stucco or plaster, 36,490 (71,359); Refuse or shorts, 107,618 (189,019); Sand, 2,399 (nil); Total, 219,462 (392,011).

Exports of asbestos in July amounted to 53,038 tons as compared with 22,793 tons in June but reached a cumulative total of 198,547 tons only in the first seven months of 1949 as against 376,804 tons in the corresponding period of last year. Such exports in July this year showed the following, with figures for June being in brackets: Crude, 66 (nil) tons; Milled fibres, 18,336 (7,058); Waste, refuse, shorts, 34,636 (15,735). These exports in the first seven months of 1949 were as follows, with figures for same period a year ago being in brackets: Crude, 213 (485) tons; Milled fibres, 64,387 (128,328); Waste, refuse, shorts, 133,947 (247,991).

Canadian Carloadings

OTTAWA—Revenue freight loaded on the Canadian railways during the week ended September 24 advanced to 3,850 cars of woodpulp and paper as compared with 3,783 cars in the preceding week but below the 4,132 cars in the similar week a year ago, the Canadian Government reports.

The Eastern Division accounted for 3,388 cars of woodpulp and paper in the week as against 3,303 in the previous week and 3,582 in the similar week of last year, while the Western Division showed 462 cars as compared with 480 in the preceding week and 550 in the corresponding week a year ago.

Such car loadings from the first week of 1949 until the week ended September 24 declined to a cumulative total of 147,755 as compared with 161,185 a year ago in the similar period, with the Eastern Division showing 129,053 this year as against 140,856 last year in the same period and the Western Division accounting for 18,702 this year as compared with 20,329 a year ago in this period.

Asbestos Workers' Wage Boost

OTTAWA—Employes of Quebec Asbestos, Ltd., a East Broughton, Que., members of the National Syndicate of Asbestos Workers who did not join the asbestos strike last winter, have been granted a general wage increase of ten cents an hour, retroactive to January 1, 1949. The syndicate is reportedly negotiating a new contract in accordance with findings of the board issued August 23. Members of the board were Chief Magistrate Joseph Bilodeau as chairman; T. Fontaine of the National Asbestos Syndicate for the employes, and F. Smith for the company.

Coast Wage Vote, About Oct. 18

PORTLAND, Ore.—The delegates of about 15,000 paper workers and representatives of 35 Pacific Coast pulp and paper manufacturers ended a ten-day wage conference September 28.

The results were not announced in the joint statement issued by the unions and operators because such action cannot be taken until union members vote on the issues. This will be about October 18.

There were 120 delegates from 43 local unions of two international brotherhoods and 100 management representatives of 35 mills in the three Pacific states at the negotiations.

The joint statement said the session marked the 15th year of continued agreement between the Pacific Coast Ass'n. of Pulp & Paper Manufacturers and the International Brotherhood of Sulphite & Paper Mill Workers of IBPM.

John Sherman, vice-president of the union, was chairman for the union and A. R. Heron, vice-president of Crown Zellerbach, chairman of the employers' committee.

Wis. to Weigh Pollution Control

MADISON, Wis. — Having already established controls over paper and other industries in its anti-pollution program, it is expected Wisconsin will bring about a general investigation of water problems by the Legislative Council next year.

A resolution was drawn for the council's consideration at its first formal meeting here October 10 for the creation of a special sub-committee that would be specifically directed to look into water conservation matters. Regulatory action is almost certain to follow the tentative beginnings the state has made ordering that pollution of surface waters by industrial users be curtailed, it is stated.

Stability of the committee on water pollution received a severe blow with the announcement that L. F. Warrick, its secretary, is leaving the state service soon. Mr. Warrick has been described by state officials as a foremost authority on pollution of surface waters and how to prevent, treat and control it.

Gammexane Smoke Harms Paper

NEW YORK — SMOKE of gammexane, or benzene hexachloride, one of the more promising of the new synthetic insecticides, is detrimental to papers, S. Chakravorti of the research laboratory of the National Archives of India stated in a recent issue of *Nature*.

Two-ounce gammexane smoke generators were used by Mr. Chakravorti in closed rooms where paper samples were exposed. After three days the samples were tested, and were found to have lost from one-half to nearly three-fourths of their tensile strength and resistance to breaking.

Some of the samples were artificially aged by heating for three days at boiling temperature. Most of them yellowed, and practically all became less resistant to folding. One all-rag paper, normally able to withstand more than 4,000 foldings before breaking, after the gammexane-plus-aging treatment, broke the first time it was folded.

Style Manual for American Standards

NEW YORK—The American Standards Ass'n., has published a Style Manual for American Standards as a guide to bring about greater uniformity in presentation of technical data, particularly in those generally agreed upon standards which have been given approval as "American Standard." Although primarily intended for use by the technical committees working under the procedure of the Association, the Manual contains recommendations and suggestions which may be helpful to any organization responsible for editing and publishing technical documents.

Principal sections include suggestions for outline form and numbering; capitalization; punctuation; spelling; abbreviations for technical terms; use of italics; a few simple rules for tables and illustrations; a standard bibliographical style; and general format with illustrations.

Copies of this 28-page manual may be purchased from the American Standards Ass'n., 70 East 45th street, New York 17, N. Y.

$700,000 for Hoosac Flood Control

NORTH ADAMS, Mass.—Paper manufacturers in the Hoosac River area are hailing recent word from Washington of agreement on an appropriation of $700,000 for flood control here and in Adams, reached by members of the House-Senate Conference Committee which drew up a new appropriations bill for Army Engineers designed to be acceptable to both houses of Congress. The Conference Committee agreed to give each of the two cities an appropriation of $350,000 during the current fiscal year for construction work, aimed at preventing a recurrence of last December's floods, as well as the four major floods in the last 22 years. The appropriation covers widening and deepening of the channel and for dikes to protect lowlying areas. The House had granted no funds for flood control work at Adams and North Adams, but the Senate had given each a $400,000 appropriation.

Smith AIFT Placement Director

PHOENIX, Ariz. — Arthur J. Smith, Jr., has been named director of placement for the American Institute for Foreign Trade at Thunderbird Field near this city, Dr. William L. Schurz, acting president of the Institute, reports.

Starting this Fall semester, the Institute begins its fourth year of operation as a national center of higher education in the field of international commerce, with an enrollment of approximately 260 students representing 38 states, the District of Columbia, Turkey and Sweden.

Casein Output Up 42 Percent

WASHINGTON — Dry casein output totaled 1,275,000 pounds in August, a gain of 42 percent over the same month of last year, the Bureau of Agricultural Economics reports.

The Agriculture Department agency said that August 31 stocks fell to two million pounds, the lowest on record for that date. It noted that prices of domestic acid ground casein in New York city strengthened during September.

August's output was off 66 percent from 1947 and 25 percent from the 1943-47 average. For the first eight months, however, output topped a year ago by 45 percent and the five-year average by one percent. Stocks on August 31, 1949, were off 44 percent from a year earlier and 54 percent from the five-year average, when they varied widely.

Pakistan Seeks Canadian Newsprint

OTTAWA — Pakistan would like to see trade with Canada balanced and would like to earn as much as possible, with newsprint amongst the products Pakistan would like to purchase in Canada, Mohammed Ali, High Commissioner for Pakistan in Canada, declared during an address to the Board of Trade here. "One-way traffic can only go on for so long," he said, indicating that "in the two years since Pakistan has been trading with Canada, $20 million has been spent here."

LITERATURE . . . .

B. F. Goodrich Co., Akron, Ohio. Bulletin 9010, "Armorite," describing construction of chutes, pipes, and other industrial applications where this abrasive-resistant rubber is used as lining.

B. F. Goodrich Co., Akron, Ohio. Bulletin, 4200, "Welding Hose," a catalog section which illustrates and gives data on oxy-acetylene and duo-weld hose.

Hercules Powder Co., Wilmington, Del. Booklet, "Synthetic Resins," revised edition. Describes resins used in the manufacture of protective coatings, adhesives, printing inks, sizes for paper and textiles, binders for flameproof compositions, and many other products.

Harper & Bros., 49 E. 33rd street, New York, N. Y. Book, "Bottom-Up Management" by William B. Given, Jr., president of American Brake Shoe Co., 171 pp., $2.50. Presents the author's case for allowing initiative up and down the line by explaining the workability of the system in his own company. By analyzing procedures and mechanisms, and by using human experience as illustration, he shows the adaptability of his plan to other kinds of businesses. The crux of the plan is: know your people. It leaves to foremen, superintendents and intermediate executives the basic job of devising work methods to execute top management policy.

U. S. Department of Commerce, Office of Technical Services, Washington 25, D. C. Clothbound book, 723 pp. $6.00, PB 98072, "The Royal Society Scientific Information Conference: Report and Papers Submitted." Provides a comprehensive review of the problems involved in keeping informational techniques abreast of laboratory discoveries. Separate sections deal with publication and distribution of papers reporting

original work; abstracting services; indexing and other library functions; and the preparation of reviews, annual reports and related documents. While the proceedings do not provide answers to the problems raised, OITS believes they should serve to focus the attention of scientists on the need for improvement in the techniques of organizing knowledge in their fields, and as a basis for further work on the subject. Also available from OITS, PB 98072-S, 62 pp., 80 cents, "A List of Periodicals and Bulletins Containing Abstracts Published in Great Britain," prepared in June 1949, published in Great Britain. Make check payable to the Treasurer of the United States.

U. S. Government Printing Office, Division of Public Documents, Washington 25, D. C. Booklet, "Developing & Selling New Products; A Guidebook for Manufacturers." Price 25 cents.

De Laval Steam Turbine Co., Trenton 2, N. J. Book, "De Laval Engineering Handbook" 101 pp., price $2.00, second edition. A reference book on the design, operation and installation of pumps, turbines, compressors and gears. Is divided into six main sections, viz., mathematical, mechanical and fluid information of a general nature applying to more than one of the following sections; steam turbine data; centrifugal pump data; IMO pump data; compressor, blower and exhauster data; helical reduction gear data; worm reduction gear data. Semi-flexible leatherette bound.

Alexander Bros., 406 North Third street, Philadelphia 23, Pa. Bulletin, "Cone-Master . . . The Improved Leather Belt for Taper Cone Pulleys." Sales copy on the patented 3-ply leather belt for cone-pulley drives in wide use in paper mills. Also bulletin "Duplex Link Belt," technical copy on the *double-ply* patented construction.

American Brake Shoe Co., American Steel Div., 230 Park avenue, New York 17, N. Y. Bulletin CC-3, Selector and Comparison Chart on "Amsco Welding Rods and Electrodes." Lists each welding rod and electrode and indicates the type of service for which designed. Metallurgical and physical descriptions of each rods are arranged so sa to simplify selection. For comparison purposes, competitive rods also are listed.

Buffalo Electro-Chemical Co., Inc., Research and Development Div., Station B, Buffalo 7, N.Y. Booklet, "Pulp Bleaching With Hydrogen Peroxide."

INDUSTRIAL PRODUCTION, BY INDUSTRIES

(Without Seasonal Adjustment)

[Index numbers of the Board of Governors, 1935-39 average = 100]
Source: Federal Reserve Bulletin, September, 1949

Industry	1948 July	Aug.	Sept.	Oct.	Nov.	Dec.	1949 Jan.	Feb.	Mar.	Apr.	May	June	July
Paper and Paper Products	*149*	*165*	*166*	*172*	*170*	*153*	*163*	*158*	*151*	*146*	*144*	*143*	*p128*
Paper and pulp	145	160	160	167	163	149	158	154	148	142	139	138	*p124*
Pulp	170	191	181	194	189	173	189	183	176	167	166	159	...
Groundwood pulp	104	107	103	109	110	107	105	100	102	97	98	95	...
Soda pulp	96	110	107	111	107	104	107	108	106	100	97	80	...
Sulphate pulp	283	328	301	330	317	285	327	309	291	274	273	275	...
Sulphite pulp	135	148	145	153	149	137	145	145	142	135	r135	122	...
Paper	141	156	156	163	159	146	153	150	143	138	135	134	120
Paper board	165	184	189	193	195	167	182	174	163	162	162	164	142
Fine paper[1]	74	83	83	...	...	...	...	...	...	...	...	...	...
Printing paper	150	160	161	172	165	160	157	158	155	151	r149	141	126
Tissue and absorbent paper	153	161	163	172	162	153	159	163	160	153	r142	142	130
Wrapping paper	135	153	148	157	150	142	151	147	138	123	115	117	111
Newsprint	95	99	98	100	99	98	99	98	99	99	99	101	100	95
Paperboard containers (same as Paperboard)	...	...	...	...	...	...	...	...	...	...	...	...	...

p Preliminary. r Revised. [1] This series is in process of revision.

NOTE.—For description and back figures see BULLETIN for October 1943, pp. 940-984, September 1941, pp. 878-881 and 933-937, and August 1940, pp. 753-771 and 825-882.

HOURS AND EARNINGS OF PRODUCTION WORKERS IN MANUFACTURING INDUSTRIES

[Compiled by the Bureau of Labor Statistics]

Industry group	Average hours worked per week: 1948 June	July	1949 Mar.	Apr.	May	June	July	Average hourly earnings (dollars per hour): 1948 June	July	1949 Mar.	Apr.	May	June	July
All manufacturing	*40.2*	*39.8*	*39.0*	*38.3*	*38.5*	*38.9*	*38.8*	*1.316*	*1.332*	*1.374*	*1.374*	*1.373*	*1.380*	*1.383*
Durable goods	*40.5*	*40.0*	*39.4*	*39.0*	*39.0*	*39.3*	*39.0*	*1.385*	*1.407*	*1.455*	*1.457*	*1.457*	*1.465*	*1.467*
Nondurable goods	*39.8*	*39.5*	*38.6*	*37.6*	*38.1*	*38.4*	*38.7*	*1.242*	*1.252*	*1.287*	*1.285*	*1.286*	*1.291*	*1.300*
Paper and allied products	42.8	42.5	41.0	40.3	40.5	40.9	41.3	1.292	1.317	1.331	1.330	1.333	1.346	1.362

NOTE.—Figures for June and July 1949 are preliminary. Back figures are available from the Bureau of Labor Statistics.

FACTORY EMPLOYMENT AND PAY ROLLS, BY INDUSTRIES

(Without Seasonal Adjustment)

[Index numbers of the Bureau of Labor Statistics. 1939 = 100]

Industry group or industry	Factory employment: 1948 June	July	1949 Mar.	Apr.	May	June	July	Factory pay rolls: 1948 May	June	July	1949 Mar.	Apr.	May	June
Paper and Allied Products	*146.9*	*146.1*	*143.6*	*141.4*	*140.4*	*139.9*	*138.1*	*331.1*	*337.8*	*341.7*	*327.6*	*317.0*	*316.3*	....
Paper and pulp	148	149	145	144	143	....	....	343	348	358	332	323	321	....
Paper goods, n.e.c.	164	160	162	160	159	....	....	355	358	355	368	360	365	....
Paper boxes	134	131	130	128	127	....	....	290	305	295	293	280	281	....

NOTE.—Underlying figures are for pay roll period ending nearest middle of month and cover production workers only. Figures for June and July 1949 are preliminary. Employment indexes for individual industries and pay roll data not available for June, pending revision by the Bureau of Labor Statistics of its manufacturing series. Revised data will be published in the BULLETIN for October, 1949. Back data and data for industries not here shown may be obtained from the Bureau of Labor Statistics.

PRODUCTION . . . .

Paper and Board Production 1948

Preliminary Report

Grade (Short tons)	1948
TOTAL, ALL GRADES	21,921,757
PAPER, TOTAL	9,800,029
Newsprint	875,760
Groundwood paper, total	[808,110
Groundwood publication and printing paper, total	[544,593
A Grade	384,165
B Grade	160,428
Groundwood converting paper, total	233,133
Hanging	95,119
Box lining and covering	5,942
Body stock afor coating	45,603
Other converting, including drawing, tablet, album, etc.	86,469
Miscellaneous groundwood paper, total	30,384
Writing and mimeograph	13,177
Railroad manila and poster	10,402
Other miscellaneous groundwood paper	6,805
Book paper, total	2,338,671
Book publication and printing paper, total	1,836,569
Plain	371,922
Supercalendered	438,718
Paper machine coated, all grades, total	[751,010
Coated one side	[52,707
Coated two sides	[698,303
Offset	247,097
Other book printing paper	27,822
Book converting paper, total	484,262
Body stock for coating	218,566
Envelope	137,905
Tablet	77,116
Other book converting paper	50,675
Miscellaneous book paper	17,840
Fine paper, total	1,141,702
Writing paper, total	908,890
Containing rags, etc., total	138,292
Bond and writing	68,963
Ledger	12,447
Manifold	5,675
Mimeograph, gelatin, and spirit process	3,088
Index	5,676
Reproduction	20,478
Papeterie and wedding	9,459
Protective and check paper	7,000
Map and chart	2,329
Drawing, mechanical and detail	2,034
Other writing, containing rags	1,143
Chemical wood pulp writing paper, total	770,598
Bond and writing	474,164
Ledger	36,116
Manifold	15,061
Mimeograph	75,145
Gelatin and spirit process duplicating	32,698
Map and chart	4,173
Drawing, mechanical and detail	3,513
Papeterie and wedding	67,930
Protective and check paper	17,811
Reproduction paper, total	23,325
Opaque circular	9,865
Other chemical wood pulp writing paper	10,797
Bristols, except rag index and bogus, total	88,136
Index (chemical wood pulp)	62,937
Printing	18,175
Uncoated post card	3,101
Other bristols, except rag index and bogus	3,923
Cover paper	50,772
Text paper	20,972
Thin paper, total	72,932
Carbonizing, free from groundwood pulp	28,232
Condenser	6,814
Cigarette	31,213
Other thin paper	6,673
Coarse paper, total	3,024,846
Wrapping paper, total	798,002
Kraft, total	370,365
Butchers	146,583
M.F. and M.G. wrapping paper	223,802
Glassine, greaseproof, and vegetable parchment	65,067
Other wrapping paper, total	362,550
Butchers	153,288
Grocers and imitation parchment	8,542
Screenings, core stock, bogus, and mill wrappers	101,197
M.F. and M.G. wrapping paper	99,523
Bag paper, total	727,905
Kraft, total	653,046
Grocery and variety bag stock	619,547
Other kraft bag stock	33,499
Glassine, greaseproof, and vegetable parchment	42,284
Other bag paper	32,575
Shipping sack paper, total	616,776
Kraft, total	602,361
Meeting minimum standards Fed. Spec. UU-S-48	589,338
Other kraft shipping sack paper	13,023
Bleached and semibleached shipping sack paper	5,884
Rope and combination rope and kraft shipping sack paper	8,531
Converting paper, total	882,163
Kraft, total	596,165
Asphalting, including creped or creping stock for asphalting	215,863
Creping, except stock for asphalting, impregnating, laminating, and toweling	30,102
Envelope stock	77,231
Gumming stock	83,578
Twisting and spinning stock (18 lb. and up)	29,953
Waxing stock (18 lb. and up)	55,017
Other kraft converting stock	104,421
Glassine, greaseproof, and vegetable parchment	27,940
Other converting paper, total	258,058
Waxing stock (18 lb. and up)	159,430
Cup stock, under 90 lb.	21,079
Envelope stock, total	11,100
Manila	2,529
Other coarse paper envelope stock, except kraft	8,571
Gumming stock	5,816
Other converting paper	60,633
Special industrial paper (all weights and calipers), total	315,900
Abrasive paper	11,997
Cable paper	16,952
Electrical insulation and armature paper and paperboard	27,730
Gasket paper and paperboard	5,249
Stencil backing paper and stencil board	4,698
Tabulating card stock	74,627
File folder stock	11,586
Tag stock, including manila board	86,106
Wallet and patch stock	4,844
Pressboard, including imitation pressboard	13,962
Other special industrial paper	58,149
Sanitary paper stock, total	982,644
Sanitary napkin stock, wadding	43,672
Toweling stock, total	225,241
Industrial (bulk and dispenser types)	169,842
Household (retail packages)	55,399
Toilet tissue stock, total	473,979
Regular	405,165
Facial tissue grades	68,814
Napkin stock, total	91,771
Industrial (bulk and dispenser types)	54,559
Household (retail packages)	37,212
Facial tissue stock	132,543
Other sanitary paper stock	15,438
Tissue paper, except sanitary paper and thin paper, total	205,095
Wrapping tissue	55,857
Waxing tissue stock	64,326
Twisting tissue stock	19,338
Fruits and vegetable wraps	37,724
Pattern tissue stock	7,405
Sales-book tissue stock	1,339
Crepe wadding for packing	9,698
Other tissue, except sanitary and thin paper grades	9,408
Absorbent paper, total	107,301
Blotting paper	9,442
Filter paper	3,553
Matrix paper and board	10,092
Vulcanizing fiber stock	30,387
Resin impregnating stock	35,204
Die wiping stock	7,169
Other absorbent paper	11,454
PAPERBOARD, TOTAL	9,368,774
Container board, total	5,078,929
Liners, total	3,436,305
Kraft	2,205,866
Jute	1,206,984
Other liners	23,455
Corrugating material, total	1,372,691
Kraft	110,995
Straw	400,726
Bogus	340,191
Other corrugating material	520,779
Container chipboard, total	269,933
Solid fiber board, for filler board	184,483
Other container chipboard	85,450
Bending board, total	2,674,065
Folding boxboard stock, total	2,182,354
Unlined chipboard	315,653
Single and double manila lined chipboard	640,800
Single and double lined chipboard, except manila	260,109
Coated boxboard, total	720,745
Patent coated, all types	514,214
Clay coated	115,627
Machine coated	90,904
Solid manila and chemical pulp board, bleached and unbleached, total	128,837
Frozen food container stock	78,487
Butter, oleo, shortening, and ice cream carton stock	50,350
Other folding boxboard stock	116,210
Other bending board, total	491,711
Unlined chipboard	39,585
Single and double manila lined chipboard	56,012
Single and double lined chipboard, except manila	4,542
Solid manila and chemical pulp board, total	379,156
Sanitary food container stock, total	322,947
Milk bottle stock	162,333
Milk bottle hood and lip cover stock	16,745
Liquid tight container stock	24,470
Cup lip stock	9,084
Cup and round nested food container stock (90 lbs. and up)	46,765
Milk bottle plug stock	21,802
Ice cream and food pail stock	30,964
Plate, dish, and tray stock	7,977
Other sanitary container stock for liquid, moist or oily foods	2,807
Other solid manila and chemical pulp board	56,209
Other bending board	12,416
Nonbending board, total	701,943
Setup boxboard, unpasted, total	595,927
Lined and unlined chipboard, total	555,462
News-lined	291,244
Other lined and unlined chipboard	264,218
Solid newsboard	18,524
Other setup boxboard	21,941
Other nonbending board, total	106,016
Lined and unlined chipboard, total	54,906
News-lined	33,220
Other lined and unlined chipboard	21,686
Other nonbending board	31,110
Special paperboard stock, total	827,047
Tube, can and drum stock, total	243,097
Tube stock	168,791
Can stock and drum stock	74,306
Solid wood pulp board (groundwood	10,461
Match board	34,523
Egg case filler board	32,963
Building board stock, total	451,674
Liner for gypsum and plaster board	363,981

Grade	(Short tons) 1948
Laminated wallboard stock	61,796
Other building board stock	25,897
Other special paperboard stock	54,329
Cardboard, total	86,790
Mill blanks, clay coated blank and tag stock	35,453
Photomount stock	6,396
Bogus bristol	24,372
Playing card stock	7,277
Other cardboard	13,292
WET MACHINE BOARD, TOTAL	134,285
Binder's board	39,146
Shoe board	51,077
Other wet machine board	44,062
CONSTRUCTION PAPER MATERIALS, TOTAL	2,618,669
Building paper, total	1,348,321
Sheathing paper	33,170
Felts, saturating and dry, total	1,158,450
Roofing felts	921,393
Floor covering	180,135
Automotive felts	29,506
Other felts	27,416
Asbestos paper and asbestos filled paper	93,797
Other building paper	62,904

Grade	1948 Short tons	1948 M square feet
Building board, total	1,270,348	3,344,035
Wallboard, except laminated wallboard, density over 24 pounds per cubic foot	364,562	957,080
Insulating wallboard, total (density 24 pounds or less per cubic foot, except laminated wallboard)	905,786	2,386,955
Natural surface board	165,674	450,301
Lath for plaster board	30,569	88,940
Roof insulation board	67,796	145,419
Interior board, factory finished, total	435,377	1,223,380
Building board	240,548	672,509
Panels, including tile board	114,485	307,355
Plank	16,644	44,746
Other Interior board, factory finished	63,700	198,770
Sheathing board	115,431	260,792
Other insulating wallboard (not laminated)	90,939	218,123

[1] Does not include the groundwood grades of paper machine coated paper.

[2] Includes groundwood grades of paper machine coated paper.

AWARDS

NAVY AWARDS MADE

N. Y. Q. M. Purchasing Office

Inv. No. 5247 covering Barrier Material, various, to:

Newark Paraffine & Parchment Paper Co., Newark, N. J., 7,750 rls. from: $7.38 to $17.92 per rl (Contr. No. 13693B), 1% 10 days.

Ruberoid Co., Safepack Mills Div., NYC, 990 rls from: $8.83 to $9.85 per rl (Contract No. 13692B).

Arkell Safety Bag Co., NYC, 550 rls at $8.40 per roll (Contract No. 13694B).

Angier Corp., Framingham, Mass., 1625 rls from: $4.40 to $8.61 per roll (Contract No. 13811B).

Exeter Paper Co., Inc., Chicago, 200 rolls at $6.43 per roll (1% 10 days), (Contract No. 13691B).

OBITUARIES

Walter B. Tuthill, 67, a partner in Page Tredway, New York City, died on September 25 at Mountainside Hospital, Glen Ridge, N. J., after an illness of several months. Surviving are his widow, Mrs. Marguerite Crighton Tuthill; two daughters, Mrs. Kenneth E. Schlesier and Miss Marian F. Tuthill; two sons, John H., and S. Keith Tuthill; a sister, Mrs. Herbert B. Kennedy; and a brother, D. Stuart Tuthill.

Walter Ryan, Jr., 62, sales representative of the Millcraft Paper Co., Cleveland, died in a hospital in that city on September 26. Mr. Ryan is survived by his widow, a sister and two brothers.

Moses Laque, a paper maker at the APW Products Co., Inc., Albany, N. Y., for 30 years, died at his home in that city on September 25.

Vincent Cecil Hobbs, 54, secretary of Fibreboard Products, Inc., and subsidiaries, San Francisco, died on October 2. Surviving him are his widow, Mrs. Emma Hobbs, two daughters, Jane F. and Ann C., two step-children, Mrs. Mark Kassel and Peter Balas; a brother, Merrill A. Hobbs; and two sisters, Mrs. H. J. Simmons and Mrs. Louis Woodworth.

C. Stewart Lee, 76, director and retired vice-president of the Pusey & Jones Corp., Wilmington, Del., died on October 4 in Memorial Hospital where he was taken following a heart attack

Through the years mill experience has proven that the Morden "Stock-Maker" excels for fiber beating.

Each year gives additional evidence of its versatile and efficient beating and refining treatment in many types of pulp and grades of paper.

For the last twelve years the basic and outstanding principles of Morden treatment have not changed. However, we are constantly on the alert to even further improve its mechanical features. For instance, we have recently made improvements such as:

1. **Adding a lantern ring in the packing gland.**
2. **Providing a copious oil reservoir by enclosing both the thrust and radial bearing in a one-piece cartridge.**
3. **Adding an integral coupling guard.**
4. **Adding a generous clean out sump for tramp metal.**
5. **Adding a plate with all basic operation and maintenance instructions directly on the machine housing.**

Let us explain "What's New" in Morden uses and how the "Stock-Maker" can further improve your beating and refining operation.

MORDEN MACHINES COMPANY
PACIFIC BUILDING • PORTLAND 4, OREGON

in Canada
The William Kennedy & Sons, Ltd. Owen Sound, Ontario

in England
Millspaugh, Limited, Sheffield

suffered at his home in that city. Mr. Lee began his career in the Pusey-jones sales department in 1907 and was general manager of the company during World War I. He was made vice-president in 1924, and retired in January 1948. Over the years Mr. Lee visited virtually every important paper mill in the United States and Canada, and in this capacity traveled extensively in South America, England, western Europe and Russia. Mr. Lee was a member of the Engineers Club of New York City, the Maryland Club of Baltimore, India House, New York; Delaware Turf Club and the Wilmington Country Club. Surviving are: his widow, Mrs. Elisabeth O'Donovan Lee; two sons, C. Stewart Lee, Jr., and Louis O'D Lee, and five brothers and sisters.

Wilfred L. Forsyth, secretary and sales manager of the Kelly-Forsyth Corp., Ithaca, N. Y., and former president of the Victoria Paper Mills Co., died at his home in Fulton, N. Y., on October 5, following a long illness. Surviving him are his widow, Mrs. Janet Forsyth; a daughter, Mrs. Janet F. Kelly; and a son, George L. Forsyth.

Frederick P. Brockway, 59, former superintendent of the Island Paper Mill, Carthage, N. Y., died on October 5 in a Carthage hospital. The mill is no longer operative. Mr. Brockway is survived by his widow and nine children.

AMERICAN PAPER AND PULP ASSOCIATION'S PRODUCTION RATIO REPORT*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1949		Corresponding Weeks—1948	
Aug. 27	90.9	Aug. 28	95.2
Sept. 3	89.9	Sept. 4	94.8
Sept. 10	74.1	Sept. 11	78.1
Sept. 17	94.6	Sept. 18	97.5
Sept. 24 (Revised)	95.9	Sept. 25	99.8
Oct. 1	97.6	Oct. 2	99.6

COMPARATIVE MONTHLY SUMMARIES

1948						1949	
Jan.	100.1	May	100.5	Oct.	99.1	Jan.	94.6
Feb.	99.8	June	95.7	Nov.	97.1	Feb.	92.8
Mar.	100.8	July	85.3	Dec.	87.1	Mar.	89.1
Apr.	100.8	Aug.	96.8			Apr.	85.1
		Sept.	91.8	Year Avg.	96.2	May	82.7
						June	78.6
						July	‡72.2
						Aug.	‡88.0
						Sept.	‡90.3

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1942	1943	1944	1945	1946	1947	1948	1949
Year to Date	92.0	88.2	88.0	88.4	100.6	103.7	96.9	86.2
Year Average	90.4	87.8	88.1	89.4	101.1	104.3	96.2	

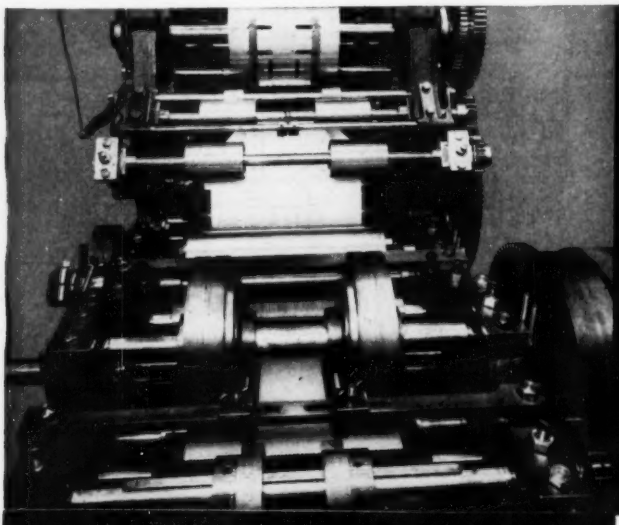
PAPERBOARD OPERATING RATIOS†

Current Weeks—1949		Corresponding Weeks—1948	
Aug. 27	86	Aug. 28	93
Sept. 3	89	Sept. 4	91
Sept. 10	72	Sept. 11	76
Sept. 17	92	Sept. 18	97
Sept. 24	91	Sept. 25	94
Oct. 1	94	Oct. 2	96

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1948	99	100	102	102	100	94	81	92	91	96	94	84	95
1949	88	85	79	79	78	75	64	86	87				

* All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.



Tube Cut-Off and Bottom Folding on a Potdevin Sack Machine

MODEL 4—Sack sizes 7-1/2 x 11-13/16 to 17 x 24-13/16 inches. Production 120 to 200 a minute.

MODEL 5—Sack sizes 9-1/2 x 15 to 19 x 32-1/2 inches. Production 75 to 120 a minute.

OVER 200 TYPES OF POTDEVIN BAG MACHINES FOR BAG STYLES

POTDEVIN SACK MACHINES

Can be connected to Potdevin aniline presses for one step converting from mill roll to multi-color sack. Electric eye and compensator insure perfect registration of preprinted rolls. Lining attachment for stronger duplex bags.

POTDEVIN MACHINE CO.

1223—38th St., Brooklyn 18, N.Y.

FROM CELLOPHANE TO MULTI-WALL

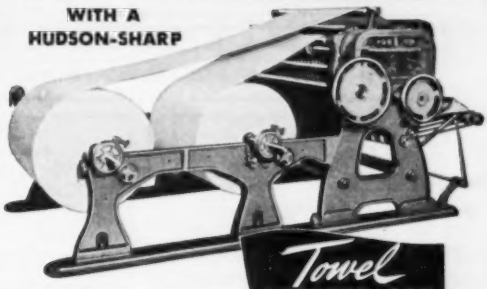
First
IN EFFICIENCY

WAX Laminator

FOR ADHESION OF FOILS, CELLOPHANES, AND OTHER PRODUCTS USING WAXES AND HOT MELTS . . . Give us a description of the materials to be processed and the laminating agent you wish to use, and we will describe in detail the machine you will need for the job. Illustrated is our No. WL-2, which has met with wide acceptance because of its ability to properly laminate these products.

HUDSON-SHARP
MACHINE CO • GREEN BAY • WIS

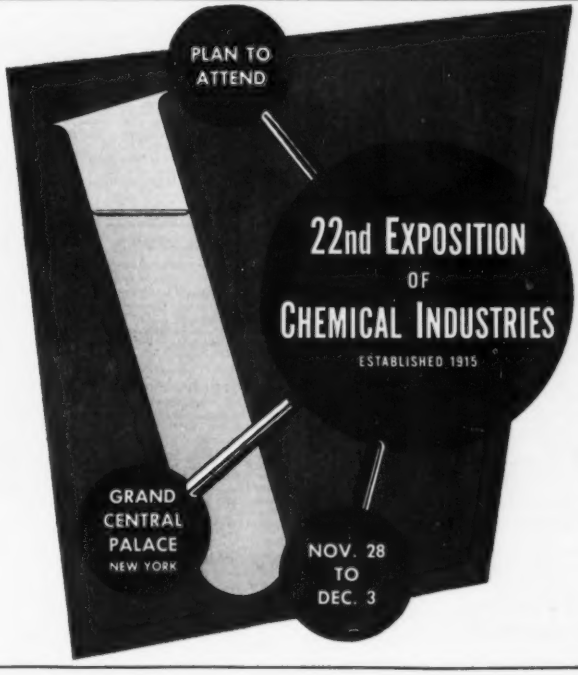
COINCIDE *PEAK* PRODUCTION
WITH A
HUDSON-SHARP



Towel INTERFOLDER

BUILDERS of folders and interfolders for the paper towel industry since the product was originated, Hudson-Sharp machines have been improved and redesigned to meet the increased production speeds required for post-war demands. Write for complete information today.

HUDSON-SHARP
MACHINE CO • GREEN BAY • WIS



Here is an unequaled opportunity for chemists, engineers, plant executives, and others in the pulp and paper industry— to see and learn from over 350 informative exhibits about the latest advances in materials, methods, and equipment for their chemical processing requirements— to get a wealth of new ideas for reducing costs, increasing production efficiency, and improving products — to discuss problems and plans with technical representatives of exhibitors here to help adapt the newest techniques and equipment to your pulp and paper operations. How else can you get so much valuable information in such a short period of time? Like thousands of others, you can make yours a more important job by being fully informed. Plan now to attend.

Management International Exposition Co.

CLEARING HOUSE

HELP WANTED

ENGINEER

MECHANICAL OR CHEMICAL ENGINEER, COLLEGE GRADUATE TO ASSIST IN OPERATION OF BY-PRODUCT CHEMICAL PLANT. BETWEEN 35 AND 40 YEARS OF AGE WITH AT LEAST TEN YEARS PRACTICAL EXPERIENCE. MUST BE CAPABLE OF SUPERVISING ALL PLANT MAINTENANCE AND INSTALLATION OF NEW EQUIPMENT. EXPERIENCE IN OPERATION OF EVAPORATORS ESSENTIAL. EXCELLENT OPPORTUNITY FOR ADVANCEMENT. GIVE COMPLETE DETAILS INCLUDING AGE, EDUCATION EXPERIENCE AND SALARY EXPECTED.

Address: Box 49-485
Care Paper Trade Journal
O-13

MALE HELP WANTED — MACHINE TENDERS, and PERFORATOR OPERATORS. ATTRACTIVE WAGES, PERMANENT POSITIONS, NO LABOR TROUBLE. MILL LOCATED IN NEW ENGLAND. ADDRESS REPLIES TO BOX 49-480, CARE PAPER TRADE JOURNAL. O-13

HELP WANTED

Opportunity for college graduate in small paper mill located in Eastern Pennsylvania ad process supervisor. Box No. 49-468, care Paper Trade Journal. O-13

MILL MANAGER

FOLDING BOXBOARD MILL LOCATED IN THE EAST HAS AN EXCEPTIONAL OPENING FOR A MAN OF UNUSUAL ABILITY. GOOD EDUCATION, PRACTICAL EXPERIENCE AND THE FACULTY FOR GOOD ORGANIZATION ARE OF UTMOST IMPORTANCE.

UNUSUALLY ATTRACTIVE COMPENSATION, INVOLVING FIVE-FIGURE SALARY PLUS PROFIT PARTICIPATION, AND FUTURE OPPORTUNITY ASSURED A MAN POSSESSING THE QUALIFICATIONS WE DESIRE.

REPLY IN COMPLETE DETAIL INCLUDING AGE, BACKGROUND AND SALARY EXPECTED. Address Box 49-467, care Paper Trade Journal. O-13

HELP WANTED

MEN WANTED
Positions Open

Sulphite mill superintendent; superintendent for shoe board, wet machine plant; general superintendent large pulp and paper mill; quality control man, preferably technical graduate; salesman experienced on fine papers, also salesman trainee; chemist to learn pulp and paper business; two master mechanics; mechanical engineer especially good in electrical engineering; machine tenders and back tenders.

We invite correspondence (confidential) with mills seeking executives and with executives seeking new positions.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington Street, Boston, Mass.
O-13

CHEMIST

GRADUATE CHEMIST ABOUT 30 YEARS OF AGE WITH AT LEAST FIVE YEARS LABORATORY EXPERIENCE FOR RESEARCH AND PLANT CONTROL WORK IN BY-PRODUCT CHEMICAL PLANT. CHEMIST WITH EXPERIENCE IN LIGNIN RESEARCH WILL BE GIVEN PREFERENCE. GIVE COMPLETE DETAILS INCLUDING AGE, EDUCATION, EXPERIENCE AND SALARY EXPECTED.

ADDRESS: BOX 49-479
CARE PAPER TRADE JOURNAL
O-13

SALARIED POSITIONS $3,500—$35,000

If you are considering a new connection communicate with the undersigned. We offer the original personal employment service (39 years recognized standing and reputation). The procedure, of highest ethical standards, is individualized to your personal requirements and develops overtures without initiative on your part. Your identity covered and present position protected. Send only name and address for details.

R. W. BIXBY, INC.
117 Dun Bldg., Buffalo 2, N. Y.
TF

WANTED

First class Paper Mill Superintendent for two machine mill.

Must have experience on straight Fourdrinier and Cylinder machines.

Also experience using old paper stock, making Kraft Papers, Corrugated Material, Boxboard specialties, etc.

Address all replies to

James J. (Shorty) Andrews
Wallcomsas Paper Mills, Inc.
P.O. North Hoosick, New York TF

URGENT

INSTRUMENT MECHANIC—$1.70 per hour for Southern Mill. Not over 45. Write Airmail for company application form.

LUBRICATION FOREMAN—$282-362 per mo. 3-5 yrs. exp Head Millwright or Mech. Exp. Head Oiler or Lub. Super highly desirable. 30-45. Write airmail for company app. form. RICE EMPLOYMENT AGENCY, 114 E. Capitol Ave., Little Rock, Arkansas. O-13

HELP WANTED

WANTED — MASTER MECHANIC: — Excellent opportunity for aggressive man having full knowledge of paper mill maintenance and experienced in handling men to obtain best results in maintenance and in keeping employees satisfied. We would like to hear from any man who feels that he would qualify. Please address Box 49-474 care Paper Trade Journal, giving full and complete information regarding experience, education, age, etc. O-13

WANTED—TOUR BOSS:—Are you a capable Tour Boss? Can you produce quantity and quality? If you can, we have just the job for you. Give full detailed information regarding your past experience and tell us why you think you qualify. Address Box 49-475 care Paper Trade Journal. O-13

WANTED — Young man, 30-35, technical graduate, experienced supervising operation of Paper or Roofing Felt Mill, wanted for position of superintendent or assistant plant manager with nation-wide, progressive building materials manufacturer. State age, experience, education, etc., in letter to Box 49-492 care Paper Trade Journal. O-20

WANTED—PLANT ENGINEER with thorough experience in sulphite and newsprint, capable of taking charge of mill maintenance and engineering work for large Brazilian Mill. Address Box 49-494 care Paper Trade Journal. O-20

WANTED — DE-INKING SUPERINTENDENT—Experienced in installation and operation of complete de-inking plant from beginning to end. Complete resume and salary desired please. Address Box 49-493 care Paper Trade Journal. N-3

SUPERINTENDENT WANTED — Experienced in making high grade folding box board and specialties. All replies kept strictly confidential. Address Box 49-489 care Paper Trade Journal. O-20

MANUFACTURER WANTS SALESMAN with following and experience in grocer, drug or industrial field, wholesale and retail, to sell toilet tissue, facial tissue, towels and napkins. Excellent compensation for the right man. Address Box 49-487 care Paper Trade Journal. O-13

SITUATIONS WANTED

ACCOUNTANT invites correspondence, desires change. 20 years paper industry. Capable serving as Comptroller-Chief Acc., etc. Know how to install and control costs and administer budgets. Address Box 49-491 care Paper Trade Journal. N-3

EUROPEAN REPRESENTATIVE — Ex U. S. Mil. Gov't. Official, recently returned from Europe, seeks connection with high grade concern as European Representative. College graduate and sound commercial background of 17 years with largest wholesale paper merchandising concern on Pacific Coast. Wide experience throughout Europe during past six years including all phases of transportation. Fluent knowledge French, German, Dutch. Good appearance. Excellent personality. Single. Address Box 49-490 care Paper Trade Journal. O-13

MECHANICAL ENGINEER—With very extensive experience in the pulp, paper and board industry over 28 year period. Desires connection with moderate sized organization planning changes to improve capacity and quality. Qualified for power, maintenance, design, construction and production supervision. Address Box 49-488 care Paper Trade Journal. N-3

MAXIMUM STRENGTH

HYDRAFINER ACTION

—gives breakdown of fiber bundles known as fibrillation.
—waterlogging of individual fibers known as hydration.
—bruising and fluffing of fiber ends known as fraying.
RESULT—Fibers built up to *maximum* strength—HYDRAFINED.
Jordan's role—Closer control over cutting to develop greater strength in the sheet.
¶ For proof that Hydrafining very definitely improves the product, contact Shartle, Dilts or Fleck.

SHARTLE BROS. MACHINE CO., Middletown, Ohio

DILTS MACHINE WORKS, Fulton, New York

Divisions of THE BLACK-CLAWSON COMPANY, Hamilton, Ohio

Western Sales Office: Mayer Bldg., Portland, Oregon

Associate: ALEXANDER FLECK LIMITED, Ottawa, Canada

Subsidiary: B-C International, Ltd., 16 Catherine Place, Victoria, London S.W.1, England

FOR SALE
A Paper Treating Machine

This consists of the following:

Unwind stand: one set of press rolls with pan, bottom rubber covered, top gun metal. 16 x 84".

First section of five dryers 36 x 82" with bottom felt and Lodding doctors and spring roll.

Size press, rolls rubber covered and gun metal 16 x 84".

Second dryer section consisting of 18 dryers 36 x 82", with bottom felt, Lodding doctors and spring roll and frames for top felt.

80" Farrel calender with levers and weights, flexible doctors. Bottom roll 18" diameter, with 10" journals; one 12" roll; three 8" rolls and one 16" roll.

Open side Rice Barton reel with drums 18 x 78", 34" centers.

Two drum Bagley & Sewall winder with slitter part, drums 12½" x 94". Fourteen sets of Koegel slitters, anti friction.

Three spare press rolls and one spare dryer with gears. L L

Machine is driven by Reliance drive with motor generator set which was put in new in 1942 at a cost of about $14,000.00.

Equipment has been operating up to speed of 450 FPM, all set up, in very good condition.

Price $15,000.00. If interested telephone or wire us.

FRANK H. DAVIS COMPANY, 175 Richdale Avenue, Cambridge, Massachusetts

Telephone Trowbridge 6-0366

TF

GOOD VALUES—NEW & USED

60" Hamblet Sheeter with Erie layboy and 10 roll backstand, double deck, with shafts and chucks, also 4 sets of slitters. A fine value.

34" Camachine No. 6 Slitter.

32" Hobbs shear cut Slitter, rebuilt like new.

39" Chandler & Price Automatic Power Paper Cutter.

New 44" National Auto. Power Cutters and 36" National Hydraulics.

Baling Presses, both hand and power.

Motors, both A.C. & D.C. for any purpose.

THOMAS W. HALL COMPANY, Inc.

120 West 42nd St., New York 18

(Plant at Stamford, Conn.) TF

FOR SALE

Long established and successful paper converting business. Owner retiring on account of age. For full particulars address Box #49-477 care Paper Trade Journal. O-6

FOR SALE

"One Ferguson Packomatic Case Sealing Machine complete with all operating equipment. Adjustable for case sizes.
"Two E. D. Jones & Sons Majestic Jordans with Motors and Electrical Equipment.
"Noble & Wood Mill complete with 600 HP Induction Motor, Magnetic Controller and Extra Equipment.

A. P. W. Products Company, Inc.

Albany, N. Y.

O-13

FOR SALE OR LEASE

Small paper mill with cylinder machine. Situated advantageously to sources of raw material and sales outlet. Ample room for converting plant in same building. Terms. Address Box 49-357, care Paper Trade Journal.

TF

FOR SALE—New 64" Maier Rotary Cut-Off Knife, cuts 32" to 120" sheet lengths up to ¾" thick board; new 100" Knowlton Bar Creaser with 4 crease widths. GREGGORY, INC., 203 No. Wabash Ave., Chicago, 1, Ill. TF

FOR SALE—Four color aniline press with sheeter and a four roll parent roll stand. Particularly adapted to production of fruit wraps. Priced for immediate sale. Address Box 49-456 care Paper Trade Journal. O-6

FOR SALE—Small Cylinder Tissue Mill. Operating six days a week at present. Excellent Water Power. $50,000 cash required for inventory and down payment. Address Box 49-469 care Paper Trade Journal. O-12

BUY U. S. SAVINGS BONDS

Classified

Ads

Bring

Results

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946.

Of PAPER TRADE JOURNAL, published weekly at East Stroudsburg, Pa., for October 1, 1949.

State of New York }
County of New York } ss.:

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Arthur E. Gordon, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the PAPER TRADE JOURNAL and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation) etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, George E. Lockwood, 15 West 47th st., New York 19, N. Y.; Editor, H. G. Heitzeberg, 15 West 47th st., New York 19, N. Y.; Managing Editor, None; Business Manager, Arthur E. Gordon, 15 West 47th st., New York 19, N. Y.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.) Lockwood Trade Journal Co., Inc., 15 West 47th st., New York 19, N. Y. Stockholders: Geo. E. Lockwood, 15 West 47th st., New York 19, N. Y.; A. J. Pearson, 15 West 47th st., New York 19, N. Y.; Samuel Mayer, 15 West 47th st., New York 19, N. Y.; John Banning, 15 West 47th st., New York 19, N. Y.; T. R. Lasser, 15 West New York 19, N. Y.; Mrs. Marion C. Zabriskie, 15 West 47th st., New York 19, N. Y.; George Saxe Macdonald Trust, Bankers Trust Co., 16 Wall st., New York 5, N. Y.; Geo. E. Lockwood, J. K. Lasser, 15 West 47th st., New York 19, N. Y., Trustees.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders or security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is 6436. (This information is required from daily publications only.)

ARTHUR E. GORDON.
(Signature of Business Manager.)

Sworn to and subscribed before me this 30th day of Stptember, 1949.

JACK EDELSTEIN.
(Seal) Notary Public, New York County.

Bronx Co. Clks. No. 5; N. Y. Co. Clks. No. 222. Term expires March 30, 1950.

SCREENS

3—Bagley & Sewall 12 plate flat screens.
1—Packer 10 plate flat screen.
1—Packer 8 plate flat screen.
1—Glens Falls Rotary Screen, practically new.

BEATERS

1—Dilts 1500# beater, bandless roll, 62" Dia., 48" Face, NEW bars and woods, iron tub.
1—E. D. Jones iron tub beater 2500# capacity roll 67" Dia., 60" Face.
1—E. D. Jones 1800# beater NEW iron tub roll 65" Dia., 52" Face, bars like new.
1—E. D. Jones 54" Dia., 52" Face new filling 66 NEW flybars, Iron tub 1500# capacity.
1—Continuous breaker beater roll 65 x 52. Special bearings and stands.

JORDANS

2—No. 1 Emerson Jordans, new fillings designed for direct connecting or belt driving.
1—Shartle Miami No. 2, NEW plug filling, good shell fillings.
2—Standard Wiener refiners, new plugs and shells, designed for direct connecting.
1—E. D. Jones Majestic Jordan, cluster fillings.

WET MACHINES

1—84" Bagley & Sewall wet machine complete with drive.
1—74" Bagley & Sewall wet machine (No Drive).

PRESSES

2—Complete press sections for 110" face machine. 1—Rubber covered, 1—Brass covered roll.
1—Complete press for 66" face machine. Both rolls 1" new rubber, 16" face.

DRYERS

20—NEW cast iron dryers 36" Dia., 84" face. Tested and passed for 50# W. P.
13—Rice Barton Fales dryers, 36" Dia., 66" face.
5—Pusey & Jones 48" x 160" C.I. dryers.

SUCTION ROLLS

1—12" Dia., 88" face Downingtown suction felt roll.
1—16" Dia., 86" face Beloit suction drum roll.

NEW ROLLS

6—5½" Dia., 98" face NEW table rolls.
20—3" Dia., 84" face NEW table rolls.
10—6" Dia., 96" face NEW brass felt rolls.
5—7" Dia., 108" face, NEW brass felt rolls.
10—7" Dia., 120" face NEW brass felt rolls.
2—8" Dia., 120" face NEW brass felt rolls.

SHEETERS & TRIMMERS

1—102" Hamblet sheet cutter with M&W Layboy.
1—88" Hamblet sheet cutter with M&W Layboy.
1—104" Beloit extra heavy duplex sheeter with M&W Layboy.
6 and 12 roll back stands with frictions.
1—54" Trimmer, good condition, very reasonable.
1—124" Moore & White 4 drum winder, anti-friction bearings.
1—110" Moore & White 4 drum winder.
1—Set 90", 2 spool reels.
1—Set 112", 2 spool reels.
R. C. Couch rolls, R. C. and brass covered press rolls, Calender rolls, etc.

OSBORNE
PAPER MILL EQUIPMENT CORP.
FULTON, NEW YORK TEL. 54

FOR SALE

1—Paper Converting Machine Co. 4-Web Dispenser Type Napkin Folder. Production 100M per Hour.

1—Two-web Paper Converting Machine Co. Quarter Fold Napkin Machine. 13⅜ cut-off. With Embosser and Three color Printer. Capacity up to 30,800 per hour on printed stock.

CAMERON SLITTERS

1—40" Model 4-B.
1—42" Type 40-T.
1—50" and 1—60" Type 28, Model 3D.
1—52" Type 8-S.
1—54" Universal Type 6.
1—62" and 1—65" Type 9.
1—62" Type 10-S.
1—72" Type 10, Model S.
1—60" Langston Mill Type Slitter. Rewind to 40" diam. Complete with Shear Cut knives and AC motor.
1—60" Kidder Model SH Slitter & Rewinder. Rewinds up to 40" diameter.
1—60" Hammersly Score Cut Slitter & Rewinder.
1—48" Inman Board Slitter and Rewinder. Rewinds 48" diameter rolls.

Power Paper Cutters: 6 Seybold—40". 1—10Z, 54" and 64" 20th Century, 54" Holyoke, 36" Dayton and 84" Seybold 2-H, 6 Oswego: 34", 38", 44", 50", 57". 2 Acme: 32" and 42". 1 White: 44". S&W Undercut: 63". 1—64" Sheridan.

1—50", 1—65" and 1—84" waxing machine.
1—Brand New Potdevin #102 Flat and Square Bag Machine, making bags from ¼ to 6 lbs.
2—Potdevin Flat & Square Bag Machines. Models 101 and 103.
1—45" German Dornbusch Embossing machine with two sets of embossing rolls.
1—36" and 1—45" Beck Rotary Sheet Cutters with 3 roll backstands and jogger delivery table.
1—45" and 1—48" Clark Aiken Rotary Sheet Cutter.
1—72" Hamblet Single Rotary Sheet Cutter with Slitting Attachment. Automatic Layboy and 12-Roll Double-Deck Backstands.
1—82" single Hamblet rotary sheet cutter with layboy and 24 roll backstands.
1—96" Clark Aiken anti-friction bearing Single Rotary Sheet Cutter with slitting attachment. Moore & White 5 partition Layboy and 6 roll double-deck backstands. Excellent condition.
1—110" and 1—66" Downingtown Duplex Rotary Sheet Cutters. Each with 2 Llewellyn Drives.
6—Shartle Washer Breaker Beaters—Rolls 80" x 55".
1—81" Dietz Facial Tissue Paper perforator, 4½" perforation.
2—81" Dietz Toilet Paper Perforators. Sheets 4½ x 4½ and 4½ x 5 and paper towels perforated 7½ and 13½".
1—#4 Hudson Sharp Special Folding Machine, complete with A.C. motor equipment.
1—41" wide 3-color roll to roll Wolverine aniline printing press. Complete with Reeves Drive and A.C. motor equipment. practically new.
1—Ohio Horizontal Baler. Makes bales 17 x 22 x standard lengths.
1—#2 Lannoye Pulper with Kenny-Falk Coupling and Gear Reducer.
1—Blaw-Knox #20 Pulpwood Grapple. With 36" Style "A" Equalizer Bar.
1—#14 Mitts & Merrill AIR-FLUFF Paper Excelsior Shredder. With AC Motor, Variable Speed Drive and 7' Feed Table.
15—two wheel Norman hand trucks. Especially adapted for handling mill rolls.
1—48" x 80" Dryer. Operating pressure 60 lbs.
1—30" x 72" IMPCO. Cylinder Mould.

GIBBS - BROWER COMPANY, INC.
21 East 40th St., New York 16, N. Y. O-3

FOR SALE

Small profitable Specialty Mill. Northern New York. In business over 30 years. Very stable. Unbroken earnings record. Uses 3000 tons unbleached sulphite a year. Owners selling to solve estate problem. Only principals considered. Reply Box 49-486 care Paper Trade Journal. O-13

FOR SALE

3 new 81" Toilet Tissue and Paper Towel Converting Machines. Can be seen in operation. Address Box 49-482 care Paper Trade Journal. O-13

PAPER BAG MFG.
3 Machines (very little used)
Must be moved by Purchaser
PRICE $20,000
CONTACTS, INC.
58 W. 47th in Hotel Wentworth LU 2-1267
O-13

FOR SALE—For export machinery and equipment of complete small tissue mill. Can be seen in operation during next sixty days. Address Box 49-470 care Paper Trade Journal. O-13

FOR SALE—Two F. L. Smithe Webb Machines in 1st class condition equipped with 2 color printing units. Range sizes from Min. 3⅝ x 6¼ O.E. to Max. 7 x 8½ O.E. Address Box 49-452 care Paper Trade Journal. D-29

PAPER COATING MACHINERY MANUFACTUEERS — Waxing, Oiling, Carbon, Laboratory Coating and Treating Machines. New improvement. MAYER MACHINE COMPANY, Inc., 1313 Buffalo Road, Rochester 11, N. Y. TF

WANTED

WANTED TO PURCHASE

JOB LOTS AND CLOSE-OUTS OF ALL KINDS OF PAPER—THE LARGER THE QUANTITY THE BETTER. SUBMIT SAMPLES AND ADVISE QUANTITIES. CONTACT GEORGE S. BLEYER, BLEYCO PAPER CORPORATION, 419 WEST 55TH STREET, NEW YORK CITY.

O-13

REBUILT ELECTRICAL MACHINERY

A.C. & D.C. GENERATORS

1600 amp. 60 volt Westph. SK Welding Gen.
1—150 KW West. SK 125 v. 1200 RPM.
125 KVA 220/3/60 277 RPM West.
150 KW Triumph 250 v. sp.wd. 600 RPM.
150 KW G.E. 550 v. 1100 RPM sp.wd.
1500 amp. 80 v. West. SK Generator

M-G SETS—R. CD.

450 KW G.E. 375 v.—710 HP Syn. 2300 v.
250 KW West. SK 250 v.—2300 v. Syn.
150 KW West. 125 v. SK—150 HP Ind.
100 KW West. 250 v.—150 HP Syn. 220/440
35 KW G.E. 125 v.—50 HP G.E.
10 KW 125 v.—15 HP Master 220/440.

AIR COMPRESSORS

1575 cfm Ing. Rd PRE2 dir. con. 215 KVA Syn. 2300 v. Motor.
756 CFM Chic. Pneu. two stage Belted.
385 cfm 100# Chic. Pneu. 12 x 10 Belted.
245 cu. ft. Ing. Read belted ER1

AC MOTORS (3 ph. 60 cy.)

HP	Make	Wdg	Spd.	Type
500	Elect. Mary.	Syn.	120	
300	G.E.	S.R.	450	I M
300	West.	S.R.	900	CW
200	G.E.	S.C.	600	IK
150	G.E.	Syn.	600	ATI
150	G.E.	S.C.	695	KT562Y
150	West.	S.C.	900	CS
125	West.	Syn.	277	
120	Cr. Wh.	S.R.	290	
100	G.E.	S.R.	450	I M
100	Al.Ch.	S.R.	580	
75	West.	S.C.	865	MS
60	West.	S.C.	1160	CS505
50	A.C.	S.C.	1750	
35	G.E.	S.C.	1150	I K
30	Vert. G.E.	S.C.	1150	KT528
30	Al. Ch. (new)	S.C. (Hi-Torq)	1685	ARH
25	C.Wh.	S.C.	900	SC504
25	500 v. West.	S.C.	1750	CS365
25	Cr.Wh.	S.C.	865	
25	Cr.Wh.	S.R.	580	1210
20	Al. Ch. (new)	S.C. (Hi-Torq)	1685	ARWHH
20	West.	S.C.	1750	CS343F
15	West	S.C.	1750	CS328

HP	Make	Wdg	Spd.	Type
15	L.A.	S.C.	3900	Fr. 324
10	West.	S.C.	570	CS386C
10	West.	S.C.	870	CS404C
10(E)	West.	S.C.	1200	CS570C
10	West.	S.C.	1750	CS571G
7½	Comm.	S.C.	865	P328
7½	West.	S.C.	3440	CS254Y
5	West.	S.C.	580	CS544
3	West.	S.C.	150	254
3	West.	S.C.	1200	CS
5(2)	West.	S.C.	1200	CS
5/1½	L.A.	S.C.	580/1800	2558
½	Master	S.C.	1125/37	PA
½	Burke	S.C.	420	EM2
3	West.	S.C.	1100	CS
3	West.	S.C.	1750	
2	West.	S.C.	800/1200	CS334
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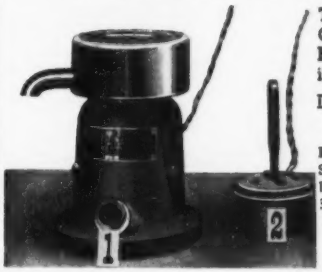

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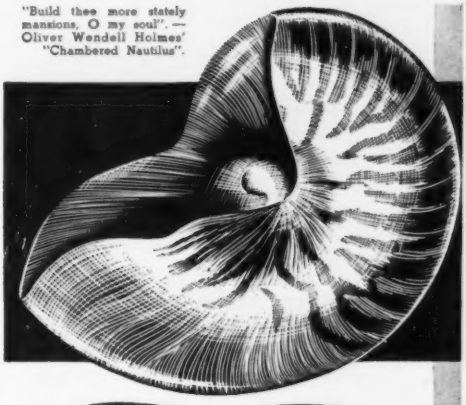

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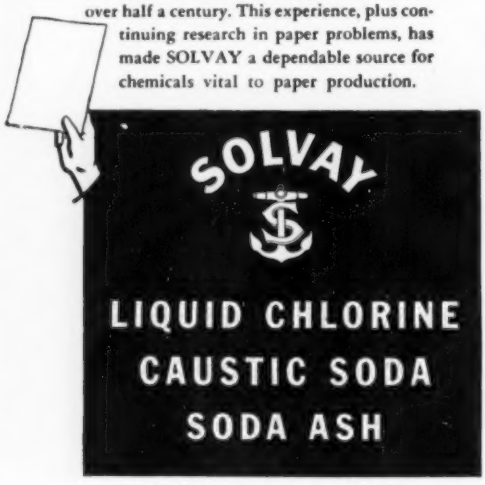

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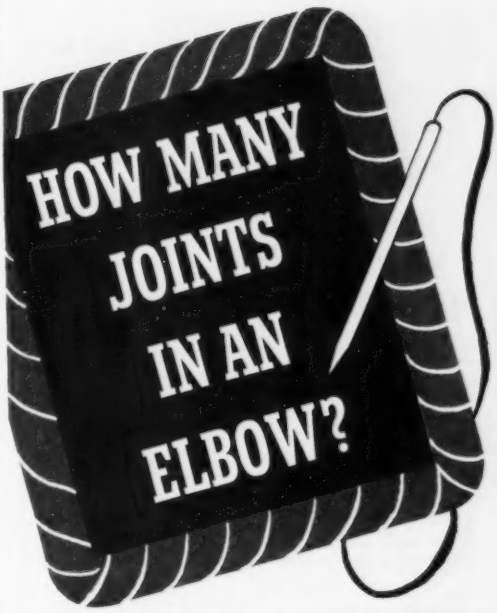

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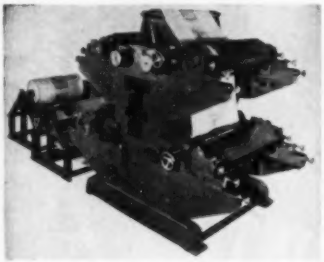

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Vanderbilt Co., R. T.
Witco Chemical Co.

FILTERS
Bird Machine Company
Hardinge Company, Inc.
Hungerford & Terry, Inc.
Johnson Corp.
Moore & White Co.
J. O. Ross Engrg. Corp.
Witco Chemical Co.
Walworth Company

FITTINGS
Crane Company
The Kuhns Bros. Co.
Phoenix Products Co.
Walworth Company

FLEXIBLE COUPLINGS
Ajax Flexible Coupling Co.
John Waldron Corp.
Koppers Company, Inc.

FLOORING, GRATING AND TREADS
The Goodyear Tire & Rubber Company
Norton Co.

FLOW BOXES, STAINLESS-CLAD
Lukens Steel Co.

FORK LIFT TRUCKS
Towmotor Corp.

FORMING MACHINES
Black-Clawson Co.
Downingtown Mfg. Co.
The Moore & White Co.
Noble & Wood Machine Co.
Oliver United Filters, Inc.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

FREENESS TESTERS
Testing Machines, Inc.

GASKETS
The Goodyear Tire & Rubber Company

GEARS
Black-Clawson Company
De Laval Steam Turbine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

GRINDERS
Carthage Machine Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell Co.
Norton Company
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Works

GRINDING WHEELS
Norton Company

GUIDES, WEB
Askania Regulator Company
The Moore & White Co.
Mount Hope Machinery Co.
Bound Brook Engrg. Co.
John Waldron Corp.

GUMMING MACHINES
Dilts Machine Works.

GUMS
National Starch Products Inc.
Stein-Hall Co., Inc.

HEADS
Babcock & Wilcox Co.
Lukens Steel Company

HEAT EXCHANGERS AND RECOVERY SYSTEMS
William Allen Son's Company
Davis Engrg. Corp.
Stickle Steam Specialties Co.
Westinghouse Electric Corp.

HEATING, VENTILATING & AIR CONDITIONING
The Appleton Machine Co.
Armstrong Machine Works
Davis Engrg. Corp.
E. D. Jones & Sons Co.
General Electric Co.
Leeds & Northrup
Minneapolis-Honeywell Regulator Co.
D. J. Murray Mfg. Co.
Red-Ray Mfg. Co., Inc.
Ross Engineering Corp., J. O.
Stickle Steam Specialties Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

HOSE (Air, Water, Suction, etc.
The Goodyear Tire & Rubber Company

IMPREGNANTS
American Anode Div., The B. F. Goodrich Chem. Co.

INDENTING MACHINES
Dilts Machine Works.

INDUSTRIAL TRACTORS
Towmotor Corp.

INK GRAVURE
Gotham Ink & Color Co.

INSTRUMENTS, TESTING AND MEASURING
Askania Regulator Company
Bauer Brothers Co.
N. P. Bowaher
The Bristol Company
The Brown Instrument Co.
E. J. Cady Company
Cochrane Corp.
The Foxboro Company
General Electric Company
W. & L. E. Gurley
Leeds & Northrup Company
National Technical Laboratories
B. F. Perkins & Son
Photovolt Corp.
Taylor Instrument Cos.
Testing Machines, Inc.
Williams Apparatus Co., Inc.

JOINTS
Johnson Corp.
Perfecting Service Corp.

JORDAN FILLINGS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

KNIVES
Black-Clawson Company
Dilts Machine Works, Inc.
Hamblet Machine Co.
Herpenstall Company
E. D. Jones & Sons Co.
The Moore & White Co.
Taylor Stiles & Co.
Valley Iron Works Co.

KNOT BORING MACHINES
DeZurik Shower Company

LABORATORIES
Timber Engrg. Co.

LABORATORY EQUIPMENT
William Allen Son's Company
Appleton Machine Co.
Bauer Brothers Co.
The Biggs Boiler Works Co.
Bird Machine Company
Dilts Machine Works
W. & L. E. Gurley
E. D. Jones & Sons Co.
Leeds & Northrup Company
National Technical Laboratories

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THROUGH MORE EFFECTIVE
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FALLS, N. Y.

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NON-RETURNABLE

RHINO

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SONOCO PRODUCTS COMPANY

HARTSVILLE, S. C.

WHERE TO BUY

Taylor Instrument Companies
Testing Machines, Inc.
Valley Iron Works Co.

LAMINATING MACHINES

Dilts Machine Works.

LAY BOYS

Dilts Machine Works
Gibbs-Brower Company, Inc.
Hamblet Machine Co.
Moore & White Co.

LUBRICANTS

Sinclair Refining Co.
Socony-Vacuum Oil Co.
Sun Oil Company
The Texas Company
Tide Water Associated Oil Co.

MAGAZINE REELS

Dilts Machine Works (Kohler System).

MATERIALS HANDLING

Cleveland Crane & Engrg. Co.
Frank G. Hough Co.
The Wellman Engrg. Co.

MICROMETERS & CALIPERS

E. J. Cady Co.
Farrel-Birmingham Co.
Montague Machine Co.
Lobdell Co.
Testing Machines, Inc.

MOISTURE CONTENT CONTROL

Askania Regulator Company
Stickle Steam Specialties Co

MOTORS AND GENERATORS

Allis-Chalmers Mfg. Co.
Chicago Electric Company
Fairbanks, Morse & Co.
General Electric Company
Reliance Electric & Engrg. Co.

NICKEL AND NICKEL ALLOYS

The International Nickel Co.

NOZZLES

Link Belt Company

PACKING BOXES

Johnson Corporation
The Moore & White Co.
Perfecting Service Corp.
Shartle Brothers Machine Co.

PAPER MACHINES

Bagley & Sewall Co.
Black-Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Lukenweld
Moore & White Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

PAPER MACHINE SLICES

Black-Clawson Company
E. D. Jones & Sons Co.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

PAPER TUBE MACHINERY

Dietz Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.

PASTING MACHINES

Black-Clawson Company
Davis, Frank H., Co.
Dilts Machine Wks.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John

PENSTOCKS

The Biggs Boiler Works Co.

PERFORATED METAL

Allis-Chalmers Mfg. Co.

PIPE

American Cast Iron Pipe Co.
Armco Drainage & Metal Products, Inc.
Babcock & Wilcox Co.
Crane Company
Michigan Pipe Co.
Michigan Steel Casting Co.
National Tube Co.
Walworth Company
Youngstown Welding & Engrg. Co.

PIPE FITTINGS

American Cast Iron Pipe Co.
The American Rolling Mill Co.
Crane Company
Michigan Steel Casting Co.
Phoenix Products Co.
Walworth Co.

PIPE MARKERS

W. H. Brady Co.

PITCH CONTROL

General Dyestuff Corp.
Monsanto Chemical Company
Rohm & Haas Co.

PLATERS

Gibbs-Brower Company, Inc
Perkins & Son, Inc., B. F.

PLATES

Armco Steel Corp.
Babcock & Wilcox Co.
The Biggs Boiler Works Co.
J. O. Ross Engrg. Corp.
Lukenweld
Lukens Steel Company
Timken Roller Bearing Co.

PLUGS

The Appleton Machine Co.
Black-Clawson Company
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.

PRECIPITATORS

Koppers Co., Inc.

PRECISION SAMPLE CUTTER

Testing Machines, Inc.

PRESERVATIVES

E. I. du Pont de Nemours & Co.
General Dyestuff Corp.

PRESSURE VESSELS, STEEL AND ALLOY

Babcock & Wilcox Co.
The Biggs Boiler Works Co.

PRESSES

Black-Clawson Company
Dietz Machine Works
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Machine Co.
The Moore & White Co.
Paper Converting Machine Co., Inc.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.
Waldron Corp., John
H. G. Weber & Co., Inc.
Williams Apparatus Co.

PULP CLASSIFIER

The Bauer Bros. Co.

PULP STOCK VALVES

Crane Company
Record Fdy. & Mach. Co.
Shartle Bros. Mach. Co.

PULPERS

Bauer Brothers Co.
Dilts Machine Works
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.

PULPS

Brown Company
Bulkley, Dunton Pulp Co., Inc.
Gottesman & Co., Inc.
Elof Hansson, Inc.
Lyddon & Co. (America), Inc.
Parsons & Whittemore, Inc.

WHERE TO BUY

Perkins-Goodwin Co.
Price & Pierce, Ltd.
Pulp and Paper Trading Co.
Pulp Sales Corp.

PULPSTONES
Norton Company

PUMPS
Allis-Chalmers Mfg. Co.
Black-Clawson Company
Buffalo Pumps, Inc.
Byron Jackson Co.
DeLaval Steam Turbine Co.
Dorr Company
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Frederick Iron & Steel, Inc.
Gibbs-Brower Company, Inc.
Johnson Corp.
Moore & White Co.
Nash Engineering Co.
Paper Converting Mch. Co.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Warren Steam Pump Company

RADIANT BURNERS
Red-Ray Mfg. Co., Inc.

RAG COOKING PROCESSES
William Allen Son's Company
The Kinsley Chemical Company
General Dyestuff Corp.
Rohm & Haas Co.

RAG CUTTERS
Gibbs-Brower Company, Inc.
B. F. Perkins & Son, Inc.
Taylor-Stiles & Co.

RECAUSTICIZING PLANTS
The Dorr Company

RECOVERY SYSTEMS
William Allen Son's Company
Babcock & Wilcox Co.
Bulkley, Dunton Pulp Co., Inc.
Rodney Hunt Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Pusey & Jones Corp.
Ross Engineering Corp., J. O.
Valley Iron Works Co.

REELS
The Appleton Machine Co.
Black-Clawson Company
Dilts Machine Works (Kohler System)
Downingtown Mfg. Co.
Hudson Sharp Machine Co.
Moore & White Co.
Paper Converting Mch. Co.
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
The Smith & Winchester Mfg. Co.

REFINERS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
Bauer Brothers Co.
Dilts Machine Works
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Morden Machines Co.
Murray, D. J., Mfg. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Sutherland Refiner Corp.
Valley Iron Works

REGULATORS
Allis-Chalmers Mfg. Co.
Armstrong Machine Works
Bird Machine Company
The Bristol Company
DeZurik Shower Company
The Foxboro Company
General Electric Co.
Johnson Corp.
Leeds & Northrup Company
Minneapolis-Honeywell Regulator Co.
National Technical Laboratories
Shartle Brothers
Stickle Steam Specialties Co.
Taylor Instrument Companies
Wallace & Tiernan

RESEARCH CHEMISTS
Timber Engrg. Co.

RESINS
American Cyanamid Company, Industrial Chemicals Division
The Dow Chemical Company
The Goodyear Tire & Rubber Company
Hercules Powder Co.
Monsanto Chemical Company
Rohm & Haas Co., Resinous Products Div.

ROLLS
American Cast Iron Pipe Co.
Appleton Machine Co.
Black-Clawson Company
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell Co.
Edward J. McBride & Co.
The Moore & White Co.
D. J. Murray Mfg. Co.
Perkins, B. F., & Sons Co.
Philbrick Engrg. Corp.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Co.
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John
The Youngstown Welding & Engrg. Co.

ROLL COVERS
The Cincinnati Rubber Mfg. Co.
The Goodyear Tire & Rubber Company
Edward J. McBride & Co.
Stowe-Woodward, Inc.

ROLL HANDLING EQUIPMENT
Dilts Machine Works (Kohler System).

ROLL STANDS
Cameron Machine Co.
Frank W. Egan & Co.
Moore & White Co.
Potdevin Machine Co.
John Waldron Corp.
H. G. Weber & Co., Inc.

ROPE CARRIERS
The Moore & White Co.

ROTARY BOILERS
The Biggs Boiler Works Co.

ROTARY STEAM JOINTS
Johnson Corp.
The Moore & White Co.
Perfecting Service Corp.

RUBBER PRODUCTS
The Goodyear Tire & Rubber Company

SATURANTS
American Anode Div., The B. F. Goodrich Chem. Co.

SATURATING MACHINES
Black-Clawson Company
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Noble & Wood Machine Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

SAVEALLS
Bird Machine Company
Hardinge Company

SCALES
Fairbanks, Morse & Co.
Merrick Scale Mfg. Co.
Testing Machines, Inc.

SCREEN PLATES
Bird Machine Company
Fitchburg Screen Plate Co.
Magnus Metal Corp.
Morey Paper Mill Supply Co.
Testing Machines, Inc.

SCREENS
Allis-Chalmers Mfg. Co.
Appleton Wire Works
Appleton Machine Company
Bird Machine Company
Carthage Machine Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

SHEET MACHINES
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Valley Iron Works Co.

SHOWER PIPES
Bird Machine Company
DeZurik Shower Company
Downingtown Mfg. Co.
Moore & White Co.
Sandusky Fdy. & Mch. Co.
Shartle Bros. Mach. Co.
Smith & Winchester Mfg. Co.

SHREDDERS
Bauer Brothers Co.
Carthage Machine Co.
Gibbs-Brower Company, Inc.

SIZING
American Cyanamid Company, Industrial Chemicals Division
Black-Clawson Company
The Dow Chemical Company
du Pont, E. I., de Nemours & Co.
Hercules Powder Co.
The Hubinger Co.
Monsanto Chemical Company
National Aluminate Corp.
Stein-Hall Co., Inc.

SIZING TESTER
W. & L. E. Gurley
Testing Machines, Inc.

SLIME CONTROL
The Dow Chemical Company
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.
Monsanto Chemical Co.
National Aluminate Corp.
Rohm & Haas Co.

SLITTERS
Black-Clawson Company
Cameron Machine Co.
Carthage Machine Co.
Dietz Machine Works
Dilts Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co., Inc.
Hamblet Machine Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.
Moore & White Co.
D. J. Murray Mfg. Co.
Potdevin Machine Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

SMOKE STACKS
The Biggs Boiler Works Co.

SPECIAL MACHINERY
Dilts Machine Works.

SPLICING TISSUE
Williams-Gray Co.

SOFTNESS-STIFFNESS TESTER
W. & L. E. Gurley
Testing Machines, Inc.

SOLUBLE OILS
American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Nopco Chemical Co.

STAINLESS STEEL
American Cast Iron Pipe Co.
Armco Steel Corp.
Michigan Steel Casting Co.
U. S. Steel Corp.

STARCH
American Cyanamid Company, Industrial Chemicals Division
A. M. Meincke & Son, Inc.
Clinton Industries, Inc.
The Hubinger Co.
National Starch Products Inc.
Stein-Hall Co., Inc.

STEAM JOINTS
The Moore & White Co.

STEAM SPECIALTIES
Babcock & Wilcox Co.
Combustion Engrg. Co., Inc.
Davis Engrg. Corp.
Johnson Corp.
Perfecting Service Corp.
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

STEEL
Allegheny Ludlum Steel Corp.
Armco Steel Corp.
Carnegie Illinois Steel Co.
Lukens Steel Company
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
U. S. Steel Corp.

STEEL, CLAD
Babcock & Wilcox Co.
Lukens Steel Company

STEEL TANKS
The Biggs Boiler Works Co.

STRAPPINGS & STRAPPING MACHINES
The Stanley Works

STUFF CHESTS
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

SUCTION BOXES
Black-Clawson Company
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

SUCTION UNIT
Paper & Industrial Appliances, Inc.

SULPHUR
American Cyanamid Company, Industrial Chemicals Division
Texas Gulf Sulphur Co.
Witco Chemical Company

SULPHUR BURNERS
Valley Iron Works Co.

SULPHUR DIOXIDE
American Cyanamid Co., Calco Chemical Div.
Virginia Smelting Co.

SUPERCALENDERS
The Appleton Machine Co.
B. F. Perkins & Son, Inc.

SYNTHETIC LATICES
American Anode Div., The B. F. Goodrich Chem. Co.
The Goodyear Tire & Rubber Company
Nopco Chemical Co.

TACHOMETERS
The Brown Instrument Co.

TAKE-OFF UNITS
Dilts Machine Works (Kohler System).

TALC
American Cyanamid Company, Industrial Chemicals Division

TANKS
The Biggs Boiler Works Co.
Cochrane Corp.
Kalamazoo Tank & Silo Co.
The Noble & Wood Machine Co.
B. F. Perkins & Son, Inc.
J. O. Ross Engrg. Corp.
Shartle Brothers Machine Co.
Waldron Corp., John

TEARING TESTERS
Testing Machines, Inc.

TENSILE TESTERS
B. F. Perkins & Son, Inc.
Testing Machines Inc.

WHERE TO BUY

THICKENERS, DECKERS AND SAVEALLS
The Appleton Machine Co.
Bird Machine Company
Bulkley, Dunton Pulp Co., Inc.
Carthage Machine Co.
Dilts Machine Works
Dorr Co.
Downingtown Mfg. Co.
Hardinge Co., Inc.
Moore & White Co.
D. J. Murray Mfg. Co.
Oliver United Filters, Inc.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Valley Iron Works Co.

TIMBER ROOF TRUSS DESIGNS
Timber Engrg. Co.

TITANIUM
American Cyanamid Co., Calco Chemical Div.
E. I. du Pont de Nemours & Co.
Titanium Pigment Co.
R. T. Vanderbilt Co.
Witco Chemical Company

TOOLS
The Stanley Works
Walworth Company

TRACTOR SHOVELS
Frank G. Hough Co.

TRACTORS & TRUCKS
Frank G. Hough Co.
Towmotor Corp.

TRANSMISSIONS
Link Belt Company

TRAPS
Armstrong Machine Works
Crane Co.
Johnson Corporation
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

TUBES
Babcock & Wilcox Co.
National Tube Co.

TUBING MACHINES
Dilts Machine Works.

TUBING, MECHANICAL
National Tube Co.

TUBS
Rodney Hunt Machine Co.
Shartle Brothers
Valley Iron Works Co.

TURBINES
Allis Chalmers Mfg. Co.
De Laval Steam Turbine Co.
General Electric Company
Hunt, Rodney, Mach. Co.

TURPENTINE RECOVERY
Foster Wheeler Corp.

UNWINDERS
Dilts Machine Works (Kohler System).

USED EQUIPMENT
Frank H. Davis Company
Gibbs Brower Co.
Thomas W. Hall Co.
J. J. Ross Company
Ross Paper Machy. Corp.
Shartle Brothers Machine Co.

VALVES
Askania Regulator Co.
The Bristol Company
The Brown Instrument Co.
Cochrane Corp.
Crane Company
Dilts Machine Works
The Foxboro Company
E. D. Jones & Sons Co.
Magnus Metal Corp.
D. J. Murray Mfg. Co.
William Powell Co.
Record Fdy. & Mch. Co.
The Sandy Hill Iron & Brass Wks.
Shartle Brothers Machine Co.
Stickle Steam Specialties Co.
Taylor Instrument Companies
Trimbey Mach. Wks.
Valley Iron Works Co.
Walworth Company

WASHERS
Bird Machine Company
Downingtown Mfg. Co.
Gibbs Brower Company, Inc.
E. D. Jones & Sons Co.
Moore & White Co.
Oliver United Filters
The Sandy Hill Iron & Brass Wks.
Rodney Hunt Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

WASTE TREATING EQUIPMENT
The Dorr Company
Hungerford & Terry, Inc.

WATER CONDITIONING
Calgon, Inc.
General Dyestuff Corp.
Hungerford & Terry, Inc.
National Aluminate Corp.

WATER DISPERSIONS
American Anode, Inc.
Rohm & Haas Co., Resinous Products Div.

WATER FINISH EQUIPMENT
Dilts Machine Works.

WATER SOFTENERS
Hungerford & Terry, Inc.

WAXING MACHINERY
Black-Clawson Co.
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Mayer Machine Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

WEB TENSION CONTROL
Dilts Machine Works (Kohler System).

WELDING EQUIPMENT
General Electric Company
Walworth Company

WET MACHINES
Black-Clawson Co.
Carthage Machine Co.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Pusey & Jones Company
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

WETTING AGENTS
American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

WHITE WATER HEATERS, AUTOMATIC SELF CLEANING TYPE
Davis Engineering Corp.

WHITE WATER TREATING EQUIPT.
Hungerford & Terry, Inc.

WINDERS AND REWINDERS
The Appleton Machine Co.
Black-Clawson Company
Cameron Machine Co.
Dietz Machine Works
Dilts Machine Works (Kohler System)
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Mach. Co.
Langston Co., Samuel M.
Moore & White Co.
Paper Converting Mch. Co.
Potdevin Machine Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Waldron Corp., John

WINDING ROLL CHANGERS
Dilts Machine Works (Kohler System).

WIRE BRUSHES
M. W. Jenkins Sons Inc.

WIRES
Appleton Wire Works
Bulkley, Dunton Pulp Co., Inc.
International Wire Works
Lindsay Wire Weaving Co.
Williams-Gray Co.

WIRE BRUSHES
Williams-Gray Co.

WOOD SPLITTERS
The Appleton Machine Co.
Carthage Machine Co.

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HUGHES PRINTING CO.
EAST STROUDSBURG, PA.

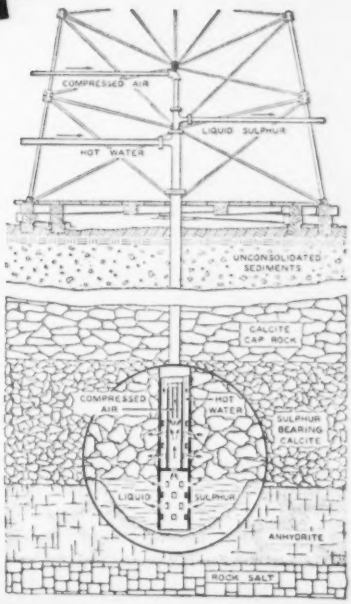
SULPHUR

*Interesting Facts Concerning This Basic Raw Material from the Gulf Coast Region

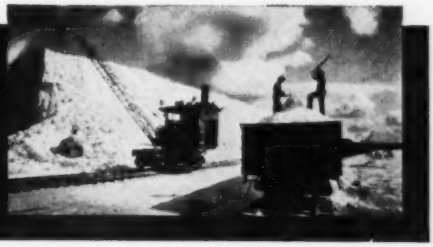
*WELL PIPING

The well equipment consists of pipes of various sizes, placed one within the other and extending from the surface into the sulphur deposit. A 10" or an 8" casing extends to and rests on the top of the cap rock. A 6" pipe, inside the casing, passes below it and reaches into the barren anhydrite. It is perforated at two different levels, separated by an annular collar. The upper set of perforations permits the hot water to enter the sulphur formation and the lower set permits the entrance of the molten sulphur to the discharge pipe fitted inside the 6" pipe.

When a well is "steamed" the hot water passes down the annular space inside the 6" pipe and outside the sulphur pipe and flows through the upper set of perforations into the porous formation. The entire mass through which the hot water circulates is raised to a temperature above the melting point of sulphur. The liquid sulphur being heavier than water, makes its way downward to form a pool and displaces water around the foot of the well, and rises in the well column through the lower perforations into a 3" pipe which is the sulphur discharge pipe. Compressed air released at the bottom of still another pipe fitted inside the 3" pipe rises and mixes with the sulphur column, forming an air lift which raises the liquid sulphur free of water to the surface.



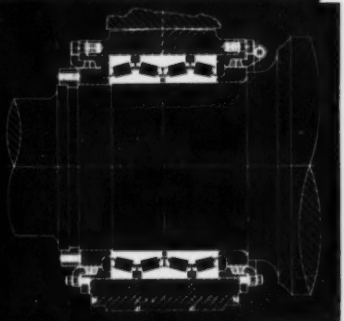
Loading operations at one of the huge vats of Sulphur at our Newgulf, Texas mine. Such mountains of Sulphur are constantly being built at our mines, from which shipments are continually made.

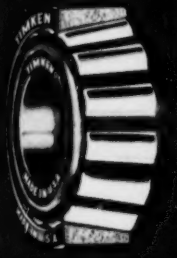


TEXAS GULF SULPHUR CO. INC.

75 East 45th St. New York 17, N. Y.

Mines: Newgulf and Moss Bluff, Texas





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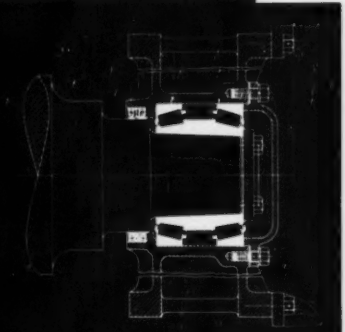
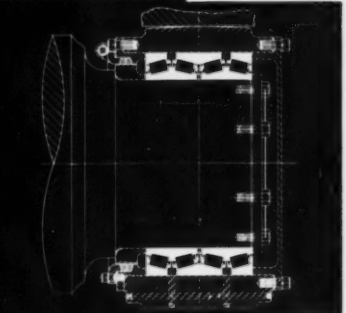


cation for inter-
supercalender.



TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

TAPERED ROLLER BEARINGS

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10-roll supercalender.

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